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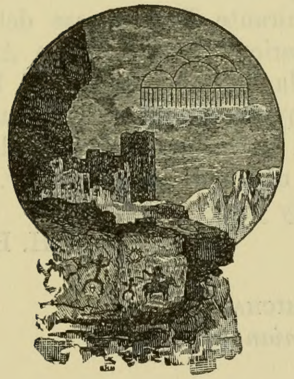
BUREAU OF AMERICAN ETHNOLOGY

BULLETIN 191

# ANTHROPOLOGICAL PAPERS

## Numbers 68–74



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# LETTER OF TRANSMITTAL

Smithsonian Institution,
Bureau of American Ethnology,
*Washington, D.C., March 31, 1963.*

Sir: I have the honor to submit the accompanying manuscripts, entitled "The Prehistory of Panamá Viejo," by Leo P. Biese; "The Language of Santa Ana Pueblo," by Irvine Davis; "Observations on Certain Ancient Tribes of the Northern Appalachian Province," by Bernard G. Hoffman; "El Limón, an Early Tomb Site in Coclé Province, Panama," by Matthew W. and Marion Stirling; "Archeological Notes on Almirante Bay, Bocas del Toro, Panama," by Matthew W. and Marion Stirling; "The Archeology of Taboga, Urabá, and Taboguilla Islands, Panama," by Matthew W. and Marion Stirling; "Iroquois Masks and Maskmaking at Onondaga," by Jean Hendry, and to recommend that they be published as a bulletin of the Bureau of American Ethnology.

Very respectfully yours,

Frank H. H. Roberts, Jr.,
*Director.*

Dr. Leonard Carmichael,
*Secretary, Smithsonian Institution.*

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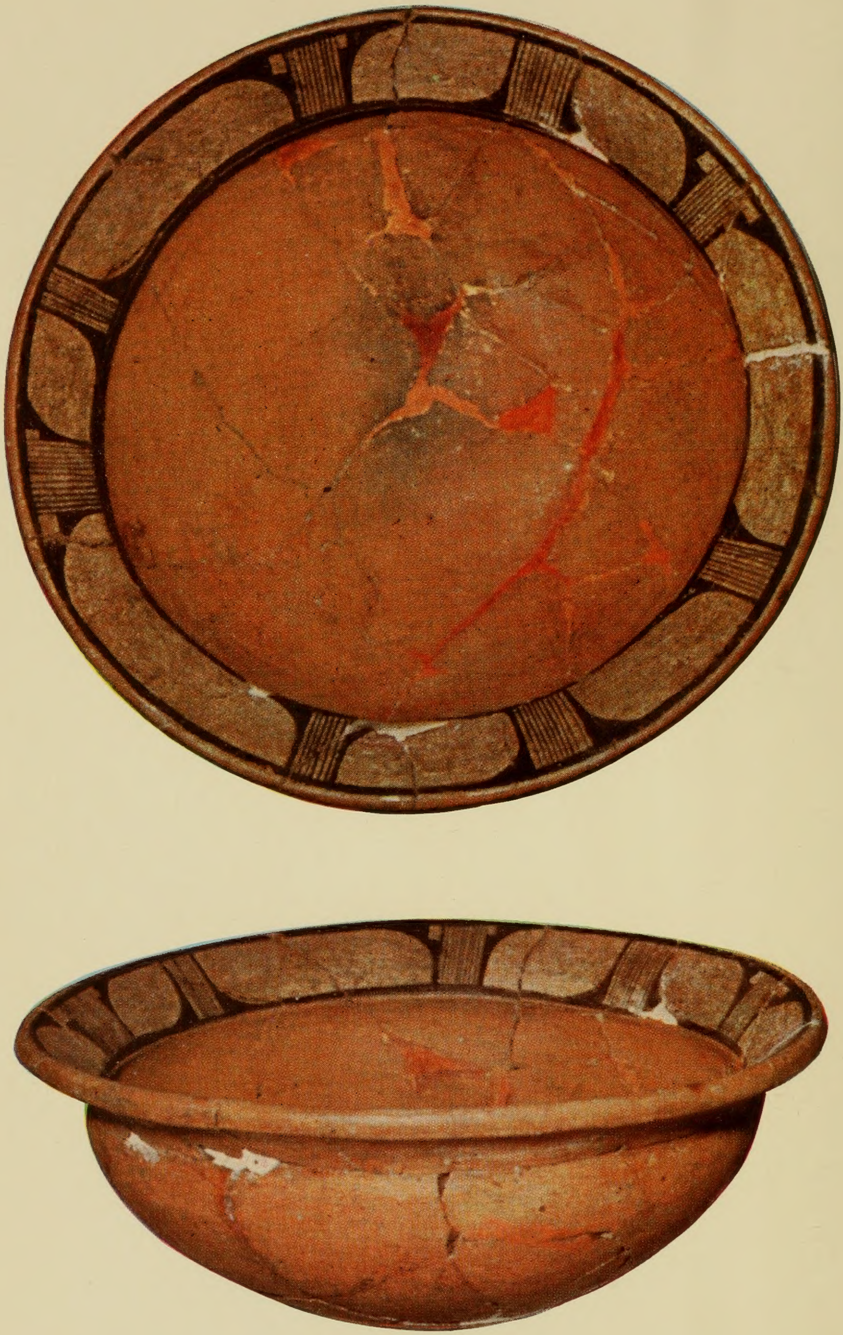

Panamá Viejo. *Upper*, Paneled urn cover; *lower*, side view. Approximately ⅙ natural size. Courtesy Dr. Russell H. Mitchell.

SMITHSONIAN INSTITUTION
Bureau of American Ethnology
Bulletin 191

Anthropological Papers, No. 68

# THE PREHISTORY OF PANAMÁ VIEJO

By LEO P. BIESE

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# PREFACE

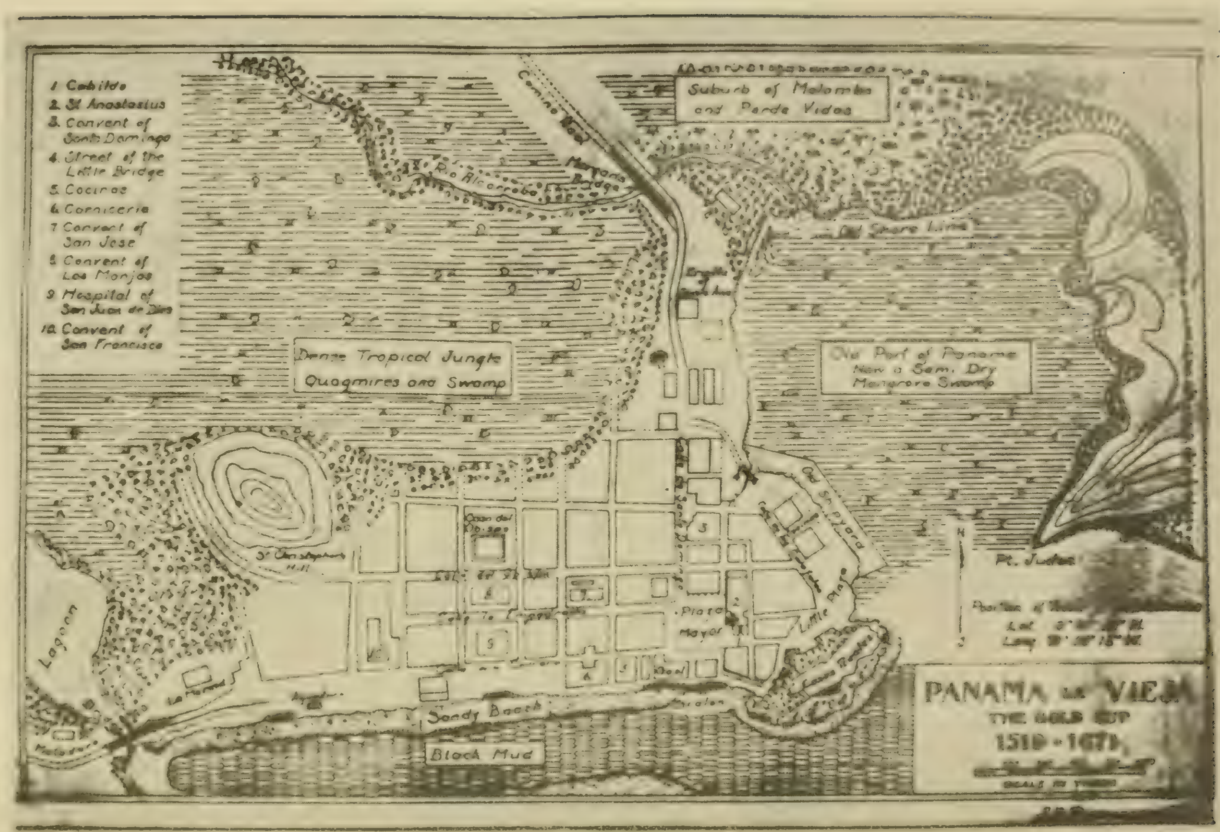
The nature of the countryside surrounding Panamá Viejo has been changed radically by industrialization. Originally it was a broad and grassy plain surrounded by multiple low hills and fronted by the sea. The climate was milder and always had less rainfall than the Atlantic side of the Isthmus. Food was easily obtainable the year round from the abundant deer, peccary and other small game, and easily caught fish of the gulf. Numerous shell heaps of prehistoric sites bordering the gulf attest to the importance of mussels and clams in the native diet. Fresh water was available from many nearby streams although the Río Abajo itself was foul and contaminated by salt water at high tide. As a dwelling site it suffered from the 20-foot high tides of the gulf which twice daily left half a mile of mud flat and rotting organic matter exposed. Additionally, the evil surrounding mangrove swamps served as a breeding place for mosquitoes and other noxious insects. It afforded, however, adequate conditions for the support of life and the establishment of a sedentary culture which maintained peace through trade or tribute and did not require a militarily defensible position.

I wish to thank especially Dr. Alejandro Méndez and the Museo Nacional de Panamá for their support and encouragement, and for the loan of the Museum's Panamá Viejo collection for study and photography. To no lesser extent do I thank the landowner, Sr. Enrique LeFevre, for permission to collect from this site. Thanks are also especially due Dr. Russell H. Mitchell for permission to use the material illustrated in the frontispiece and plates 10, 24, *b*, and 25, as well as for his encouragement and helpful advice based on long experience in the Isthmian area. Dr. Mitchell also provided much of the valuable reference material. I also wish to thank Sr. Dan Sander for the material used for plate 24; the Canal Zone Library for permission to use the historical map (map 1); and the "Panama Archaeologist" for permission to reprint the spindle whorl figures (pl. 22). Mr Gerald A. Doyle, Jr., prepared the site map; my wife, Lucinda T. Biese, did the ink drawings; and I took the photographs.

Special thanks are due to my wife for suffering through innumerable mosquito-ridden field trips, sherd-sorting periods, and manuscript revisions.

L. P. B.,
*Panama Canal Zone.*

*1961.*


1 Cabildo
2 St Anastasius
3 Convent of Santo Domingo
4 Street of the Little Bridge
5 Cocinas
6 Carniceria
7 Convent of San Jose
8 Convent of Las Monjas
9 Hospital of San Juan de Dios
10 Convent of San Francisco
Camino Real
Suburb of Malambo and Parde Vidas
Rio Algarrobo
Matasnillo Bridge
Old Shore Line
Dense Tropical Jungle Quagmires and Swamp
Old Port of Panama Now a Semi Dry Mangrove Swamp
Old Shipyard
Casa del Obispo
St. Christophers Hill
Plaza Mayor
Little Plaza
Lagoon
Sandy Beach
Black Mud
Pt. Judas
Lat.
Long.
N
PANAMA LA VIEJA
THE GOLD CITY
1519 - 1671
SCALE IN YARDS

Map 1.—Historical map of Panamá Vieja (Old Panama).

# THE PREHISTORY OF PANAMÁ VIEJO

### By Leo P. Biese

## INTRODUCTION

Panamá Viejo is the name I have applied to a combined residence and burial site situated adjacent to the well-known Spanish ruins of the same name approximately 6 miles northeast of the present Panama City.

The Spanish ruins (map 1) occupy an area approximately 1 mile long by ½ mile wide with the long axis parallel to, and fronting on, the Pacific Ocean at the Gulf of Panama. To the northeast of the ruins are several acres of mangrove swamp containing a few isolated shacks. On the east is the old port, now a semidry mangrove swamp. Directly south is the Bay of Panama. Traveling southwest from the ruins one passes through an area of several acres, sparsely populated by settlements of ramshackle houses, which is followed by the suburb of San Francisco de Calete and modern Panama City. The northernmost portion of the ruins is delimited by the Río Abajo over which passes the Punta Del Rey (King's Bridge) and the beginning of the Portobelo Trail. Farther north and northwest lies the large modern cemetery of Parque LeFevre. The archeological site herein discussed lies on the property of Sr. Enrique LeFevre, at the back of the ruins proper, in an angle formed by Diagonal 10 (a modern roadway which bisects the ruins) and the Río Abajo and bordered by the cemetery (map 2). It first was discovered in 1958 during grading operations preparatory to the expansion of the cemetery.

### HISTORICAL ACCOUNTS OF OLD PANAMA

There is a great wealth of descriptive source material available to the interested reader on the later history of "Old Panama." Because of its position of importance in the development of the New World, many eyewitness accounts have been preserved and their value increased by lengthy modern English summaries. In order to establish the presence of a historical Indian village on the excavation site, however, it will be sufficient to reconstruct only the story of Old Panama's founding and early years.

Under the Emperor Ferdinand of Spain, Antigua was established as the first stronghold on the Atlantic coast of the New Continent. In 1513 the governorship of the eastern half of Panama was given to Pedro Arias de Avila (Pedrarias the Cruel) under whom Captains Diego de Albites and Antonio Tello de Guzman were sent forth, toward Balboa's newly discovered "South Sea," to obtain gold and to establish a string of outposts for possible settlement. In the latter months of 1515, the captains arrived at the Pacific coast near a small Indian village which the local inhabitants called "Panamá." The name is generally accepted now to mean "Place of Many Fishes," but at least one chronicler, Hererra, states that the name referred to the huge local trees which the natives termed "Panamas."

Two years later, Licentiate Gaspar de Espinosa had been appointed to replace the beheaded Vasco Nuñez de Balboa in the work of exploring the Pacific coast. The expedition of Espinosa camped at this same Indian village while awaiting the return of Governor Pedrarias from a pillaging trip to the Pearl Islands and Taboga Island in the Gulf of Panama.

It is possible that this village was in the vicinity of the present Venado Beach, although the exact site is not known. The actual city was founded on a site a few miles farther east where the land was firmer and afforded better grazing for the cattle. There is no record of any Indian inhabitants at this latter location. In 1519, Pedrarias officially founded the city of Panamá with characteristic pomp and ceremony, and in 1521 he was granted a charter and coat of arms. Thereafter, the story is first one of slow development and then of rapid growth after the conquest of Peru by Pizarro. A transcontinental trail was constructed from the city of Portobelo and Nombre de Dios over which the gold of Panama and Peru was transported for shipment to Spain. For the next century or so the story wanes and finally closes with the destruction of the city in 1671 by the buccaneer Sir Henry Morgan.

## DESCRIPTIONS OF OLD PANAMA

The city had small beginnings and was relatively stable for the first 75 years. The first extant report is provided by the historian Oviedo, who visited the site in 1529, after 10 years of its existence, and stated that it was composed of 75 shacks which "were narrow and long, and sometimes the tide will wash right into their homes. To the North [the archeological site] was an invironment of mud and swamps, which caused the lack of sanitation." [1]

Twelve years later, Jeronime (Girolamo) Benzoni, an Italian historian, remarked that there were 112 wooden houses and calculated about 4,000 people, including the much more numerous Indians and African slaves (Sosa, 1955, p. 29). It may be mentioned here that the expansion of the city to its present ruined outlines and establishment of the permanent stone structures dates from a much later period, at least the early 17th century.

---

[1] Oviedo y Valdes: La historia general de las Indias, Seville, 1535 (*in* Sosa, 1955).

Carles (1960), in compiling various sources, says that the city had two important disadvantages. The first was the rather poor harbor which, because of high tides, made it necessary to anchor ships at some distance. Secondly, the water supply, except for a few brackish wells, was a half league distant at the Lavenderas (now Juan Días) and was itself frequently dry. Because of these disadvantages, in 1534 a warrant was issued by Queen Juana (Joanna) ordering the city to change its location. However, this warrant was overthrown by the inhabitants because of the consequent loss of property and the abundant food supply from nearby mussel spawning grounds. From later sources we know that this place was an important food source for the prehistoric Indians as well.

## INDIAN SETTLEMENT OF MALAMBO

It is from this point that confusion begins about the actual details of the city. The controversy centers about the location of the historical settlements of "Malambo" (Indian) and "Pererdevidas" (Negro). It is of importance because Malambo has been variously placed directly within the boundaries of our present archeological report as well as across the road and consequently out of the immediate area. The only authentic map is that made by the engineer Roda in 1609 and reproduced by Sosa (1955) from the original in the Council of the Indies. This map shows only swamp in the site area with no mention of fringe settlements. A detailed description sent to Spain at this time does not mention the settlements.

It is probable that the Spanish Archives contains, among the many reports and letters of the time, some which specifically mention Malambo, but these unfortunately are unavailable to me. Both Anderson (1911) and Bancroft (1882) contain translations of extensive excerpts from these letters which describe accurately every street and house over various periods of time, but neither of these authors mentions Malambo. On the other hand, Sosa gives:

> To the North the city prolonged the margins of the port, extending to the settlements of Malambo, to the King's Bridge and a few steps further to the rocky road leading to Porto Bello; on the other hand, the city extended behind the convents of San Francisco and La Merced, and with the suburbs of Pierde Vidas it reached the Matanza. [Sosa, 1955, p. 29.]

Matanza is now called St. Cristopher's Hill and this account would place Malambo on the opposite side of the Portobelo Trail and out of the area in question. Unfortunately, however, Sosa does not give the reference from which he derived this account. Carles (1960), too, locates Malambo to the northeast but also gives no references and presumably took some of his material from the Sosa report.

The Canal Zone Library possesses a copy of a late 18th-century map which is a modification of the original Roda map with additions of the later structures. It is used herein, with permission, as map 1, as it affords a good view of the entire site. It places Malambo on the other side of the trail and marks the present area of investigation as "dense tropical jungle, quagmires and swamp." Unfortunately, the name of the map's maker is obscured and no further references are available. Quite possibly the references of Sosa and, later, Carles, were to this map. Much later Shafroth prepared a map, which is also in the Canal Zone Library and forms a portion of his book (Shafroth, 1953), describing Malambo as being directly over the areas of investigation. He gives no reference for this location and, in addition, places the Río Gallinero under the King's Bridge and the Río Algarrobo to the far west, whereas Sosa and Carles interchange these names.

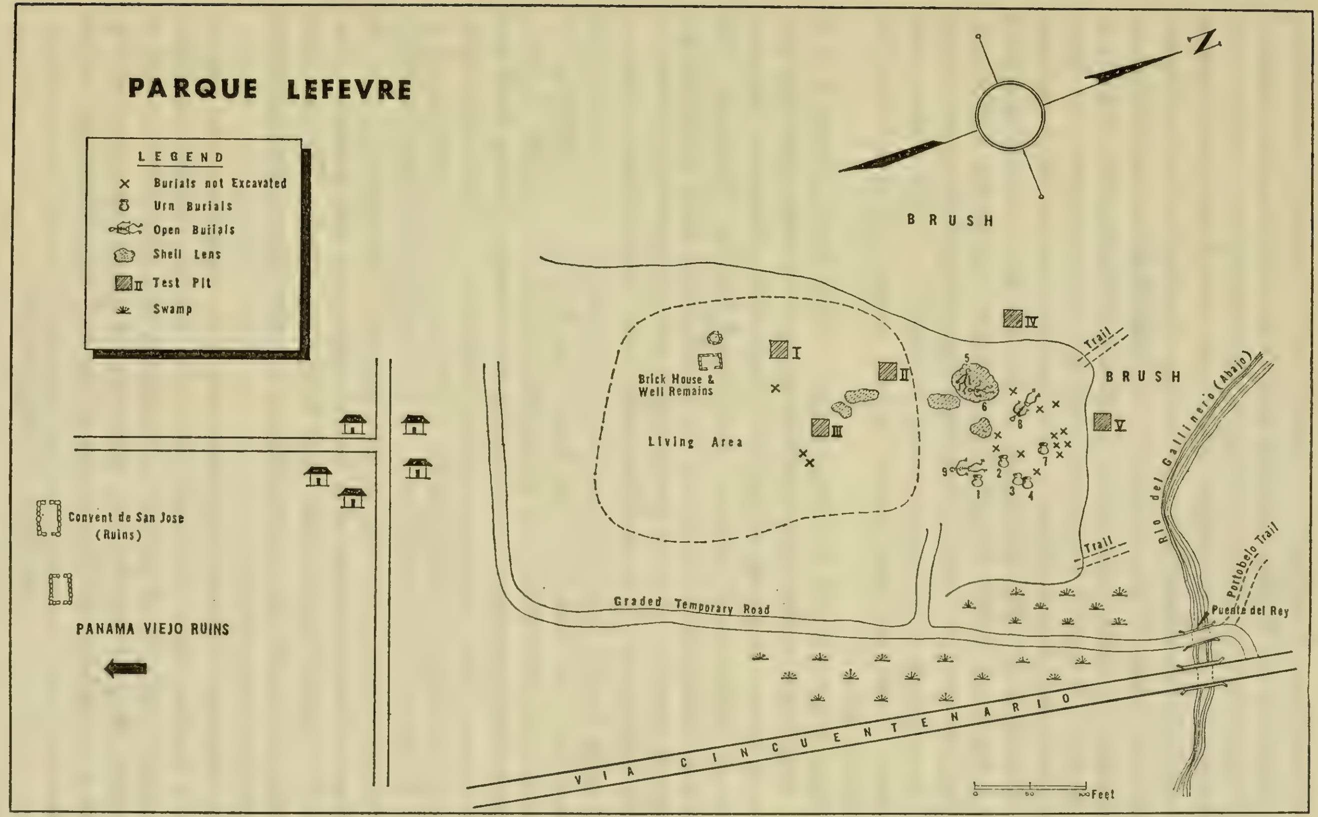
At least one investigator of this site (Smith, 1960) suggests the remains belong to those Indians present at the site before the first Spanish occupation. Definite information will not be available without radiocarbon dates or at least stratigraphic links with adjacent cultures, but, as will be seen from the discussion to follow, the ceramic relationship to other finds in Panama even at this early stage of knowledge would tend to indicate a tentative date of at least 400 years prior to the first Spanish settlement. It is my contention that this archeological site represents a new culture to be reported from Panama and that it existed in the period immediately preceding the Coclé polychrome period. The site was abandoned, reclaimed by tropical jungle until the period of Spanish occupation, again "lost," and only rediscovered during the leveling operations in 1958.

## THE SITE

(Map 2)

### DESCRIPTION

The area investigated measured approximately 500×1,000 yards. This portion was discovered when preparations were made to expand the adjacent cemetery and the earth was cleared of growth by means of heavy earth-moving machinery. During the leveling operations, multiple burial urns were torn through and redistributed across the surface. The land is a densely overgrown tropical semiswamp which remains fairly dry during the months of December through May but,


PARQUE LEFEVRE
LEGEND
× Burials not Excavated
Urn Burials
Open Burials
Shell Lens
Test Pit
Swamp
N
BRUSH
BRUSH
I
II
III
IV
V
1
2
3
4
5
6
7
8
9
Trail
Trail
Brick House & Well Remains
Living Area
Graded Temporary Road
Rio del Gallinero (Abajo)
Portobelo Trail
Puente del Rey
VIA CINCUENTENARIO
0
50
100 Feet
Convent de San Jose (Ruins)
PANAMA VIEJO RUINS

Map 2.—Map of the site.

because of poor drainage, has a great deal of standing water during the rainy season. The surrounding area, from which the site is isolated by a series of low hills, is an essentially level plain 2 miles wide. St. Cristopher's Hill is a hillock within the area about 2,000 yards to the west. It is a solitary outcrop now somewhat lower than in Spanish times as a result of erosion and the erection of several structures on its summit. Isolated sherds are scattered throughout the region as far as the hill, and it is possible that diffuse occupation may have occurred at least to this point. The region is private land and was not investigated. The area north of the site also contains scattered sherds for another 500 yards on the opposite side of the Río Abajo. In the latter portion there is a higher concentration of Spanish rubbish and the remains of a large colonial pottery kiln. This portion also has been cleared and from surface surveys apparently is not a part of the major site.

The soil is composed of approximately 6 feet (ranging from 4 to 8) of a brown sandy clay which affords somewhat better drainage and ceramic preservation than might be expected. There are isolated lenses of higher sand content averaging 1 foot in thickness. The strata are underlain throughout by a calcareous shell conglomerate known as coquina. Except for isolated burial pits partially excavated in the coquina or its natural depressions at Venado Beach, this is a culturally sterile layer present at approximately the same depth throughout the entire Pacific littoral of the Gulf of Panama. A significant difference is that areas closer to the sea reflect the geochronological changes in shoreline by a series of differing shell and sand layers. Such layering is absent at this site. There is presently a deep brown-black homogeneous humus topsoil of approximately 1-foot thickness in the burial area. It is impossible to assess accurately the degree of soil disturbance, but a general inspection of the site indicates that an average of 3 feet was removed and pushed to one side for partial construction of a temporary road. The southern portion of the site has less topsoil and in some places the underlying sandy clay is exposed.

In addition to the clearing operations, daily exposure of the land to heavy tropical rains throughout two rainy seasons has further eroded the land. Many of the sherds and at least two urns were exposed as a result. In poor runoff areas, however, the heavy rains succeeded in pooling an additional few inches of topsoil and obscuring surface finds.

## FORMER INVESTIGATIONS

The site was partially investigated in 1960, with surface collections and several test pits, under the joint efforts of the Museo Nacional de Panamá and an Air Force employee, H. Morgan Smith. The material recovered is presently in the possession of Mr. Smith at Albrook Field, Canal Zone, and has not been published. Since its discovery, the site has unfortunately been subjected to the daily raids of children and an occasional local citizen. While these raids have been confined to the immediate subsurface reachable with a machete, at least 5 burials have been demolished in my presence by upward of 15 children at a time. As a result, undoubtedly many whole vessels of the utility class have been lost for future study. In addition to the material presented here, I have located eight vessels which were purchased from local scavengers, in collections among Panama residents and Canal Zone personnel. As these vessels were all of the simplest kind represented by other material in the collection, they were not included in this report.

## METHOD OF PRESENT INVESTIGATION

Soil disturbance and lack of time while the site was being prepared for expansion of the cemetery precluded extensive trenching. The method, then, consisted of the following program:

*Burials.*—Excavation of undisturbed burials exposed on the surface or found by probing the immediate subsurface. Testing pits which yielded burials are recorded as such rather than as pits. Dense accumulations of urn fragments and skeletal material uninvestigated because of their derangement are indicated on the map.

*Shell lenses.*—Two lenses indicated on the map were cleared completely to the sterile coquina, yielding three burials discussed below.

*Surface collections.*—All artifacts with the exception of plain red ware sherds and burial urn fragments were collected for later analysis as described under the section on ceramics.

*Test pits.*—Five pits measuring 1 meter square and 1 meter deep were placed about the periphery in an attempt to determine the limits of the cemetery and heavy artifact concentrations.

*Purchases.*—All of the whole vessels mentioned were purchased from children at the site; thus only an approximate location is known, i.e., sector of the burial area. In addition, several more elaborate vessels are shown from other collections.

Pertinent material has been included from the large collection of the Museo Nacional de Panamá. These artifacts are present without context and either were purchased or brought to the museum during the active seasons.

Sporadic finds have led to the reasonable assumption that the site proper actually extends considerably farther to the north and west, but these adjacent areas presently are closed to investigations. There is evidence of probable discontinuous occupation as far as the present day Vina del Mar and San Francisco de Calete suburbs, where similar utility vessels have been discovered during excavations for house foundations. Map 2 shows only the extent of the present investigation.

## BURIAL PRACTICES

The widespread surface derangement made it impossible to define a precise plan of either the concentration or configuration of burials. The entire west end of the site literally was paved with sherds from undecorated urns which had been crushed by the earth-moving machinery. From this extensive litter of bone and urn fragments it could be seen that the western sector was primarily a burial area containing a slight admixture of living debris. The eastern sector was a dwelling site containing only sporadic burials. The distribution did not change gradually, but rather there appeared to be a sharp demarcation between cemetery and residence areas. Test pits established the size of the cemetery to be about 100 × 200 yards. Distribution of fragments further suggested a maximum of 100 burials in the concentrated area; probably considerably fewer. There well may be many more isolated burials in the peripheral area and outside the clearing, but this would appear to be a rather small cemetery in comparison with the usual Panama site.

Burials were of two major types: open burial in a simple trench or interment in urns.

Within this cemetery, burials were mainly those of the urn type. Only six open burials were identified with any degree of certainty. The large number of intact utility ware vessels 2–4 feet under the present surface of this area, would seem to indicate the sites of other open burials lacking skeletal remains because of climatic conditions.

Almost all the urns were located at approximately the same level but, by random shallow trenching between the smashed urns, several were found undisturbed in situ. Some of these were almost exposed after the rains and were only a few inches under the present surface. In each case they were within 3 feet of the new surface, representing the deepest "average depth" of these urns and thus escaping the grading operations. All, however, were badly pressure broken and squashed to less than half of their original height. The condition of many fragments with rounded smooth breaks suggested breakage by earth pressure long before the present clearing operations.

Surface or subsurface grave indications in the form of soil markings usually were absent. Red clay pockets were discovered in the area; in one case surrounding a plain urn, in another, surrounding an open burial. Five others were investigated and found to disappear after 1–2 feet; these may have been open burials without offerings in which the skeletal fragments had disappeared completely. Soil underneath the red clay pockets was trenched down to the coquina, as were several test pits. No deeper burials, such as those of Venado Beach (Lothrop, 1954) were found.

Skeletal preservation was erratic, but in general exceedingly poor. A single section of femur might be well preserved, hard, and dense, while fragments a few feet away were little more than dust and could not be cleaned. Most of the harder fragments were in areas of high shell content, while bone material in the urns was uniformly unsalvageable. Tooth remains followed the general pattern of poor preservation and indicate a considerable antemortum wear of grinding surfaces, but they were not otherwise diagnostic.

Four open burials were found undisturbed. All skeletons were fully extended, face up, and oriented north-south. All were adults; three male and one unidentified. No flexed or secondary burials were found. None of the open burials were in clear association with funerary offerings. In the absence of distinctive soil markings there was no indication of the exact size or shape of the orginal graves.

The most remarkable burials, both in preservation and attitude, were two parallel skeletons found in a shell lens. Both of these demonstrated the wide-open mouth and had the head in hyperextension with the occiput touching the cervical spine (pl. 1). Preservation did not allow demonstration of a possible cervical fracture. Six additional open burials were present in wide random distribution as indicated by surface collections of skeletal fragments without urn sherds. None of these were identifiable as to sex or orientation, but all were adults.

## BURIAL URNS

Almost all of the urns are plain; only two complete ones were recovered, both with raised designs. One incomplete set of sherds from a painted urn was also found. A large number of decorated fragments, however, indicated this type of urn to be by no means rare. The typical urn is globular with a rounded bottom. On the average they measure 50 cm. in height and 60 cm. in maximum diameter with a 30-cm. opening. The inflection point is about halfway up the vessel.

The urns are constructed of well-fired, coarse, granular clay tempered with coarse grit. In some cases this is a sand containing microscopic bits of silica and bearing minute gold particles which are visible under 10× magnification. The sherds are very strong and difficult to break by hand. The paste color is a medium brown with mottled black-to-green areas indicating irregular firing. There is often a reddish brown smooth surface exactly like that on the smaller utility vessels. Only the thicker areas show a central underfired zone. Thickness is greatest at the bottom (1.2 cm.) but is maintained fairly regularly up the vessel walls well above the inflection point. At the lip, thickness is approximately 0.7 cm. All lips have a plain, smooth taper without evidence of secondary elaboration. Dry weight of the urns often runs as much as 30 pounds. There are no lugs or handles. There was insufficient evidence to corroborate prior burning of the bones, but the size of the vessel mouths would favor secondary burial.

### LIDS

Several urns were capped with large fragments of other broken vessels but most were covered by shallow bowls with a flaring rim. These are generally about 40 cm. in diameter, 15 cm. in depth, and modeled of the same paste as the urns. Like the urns, they frequently were plain and given a red to orange-brown smooth slip. Unlike the urns, however, the lids were of thinner construction and hence somewhat better fired. A typical lid is shown (reconstructed) in plate 3. At first they might seem to be utilitarian basins, but their close fit, exact size, and absence from other parts of the site make it probable that they were constructed specifically for this purpose.

Fragments indicate that perhaps from 5–10 percent of the lids bore a white rim with overpainting of black geometric designs, contrasting sharply with the red-brown slip. A particularly good example is shown as the frontispiece. Several of the designs are shown in figure 1. The black-on-white coloration has been found on the inside and outside rims, but never on both rims on the same vessel. The inner rim is more commonly painted. In no case did the design extend onto the slipped surface of the vessel proper. Hence it is not a true polychrome since the design itself is in black on white bichrome. It is termed herein a "black-on-white-rimmed red ware" and may be stylistically related to the paneled red ware of Coclé. This coloration has not been found on vessels other than burial urn lids and represents not only the only painted ware found in any quantity on the site, but the only one which could be considered to be distinctive.

### DECORATED URNS

One decorated urn was recovered with a raised serpent design on opposite sides of the vessel mouth. The head is applique, the remainder "raised." It is shown in situ in plate 2, and reconstructed in plate 3. A schematic drawing of the serpent itself is given in figure 2. This design is unusual both in size and in style and, to my knowledge, has not been encountered previously in Central America, though it may be related to the serpent design of Veraguas polychrome. It appears to be a stylized sea creature. Sherds of similar designs, all incomplete, are discussed under "Ceramics." The vessel contained a very poorly preserved fragmentary adult skeleton and a single plain plate of utility ware as described below, and it was

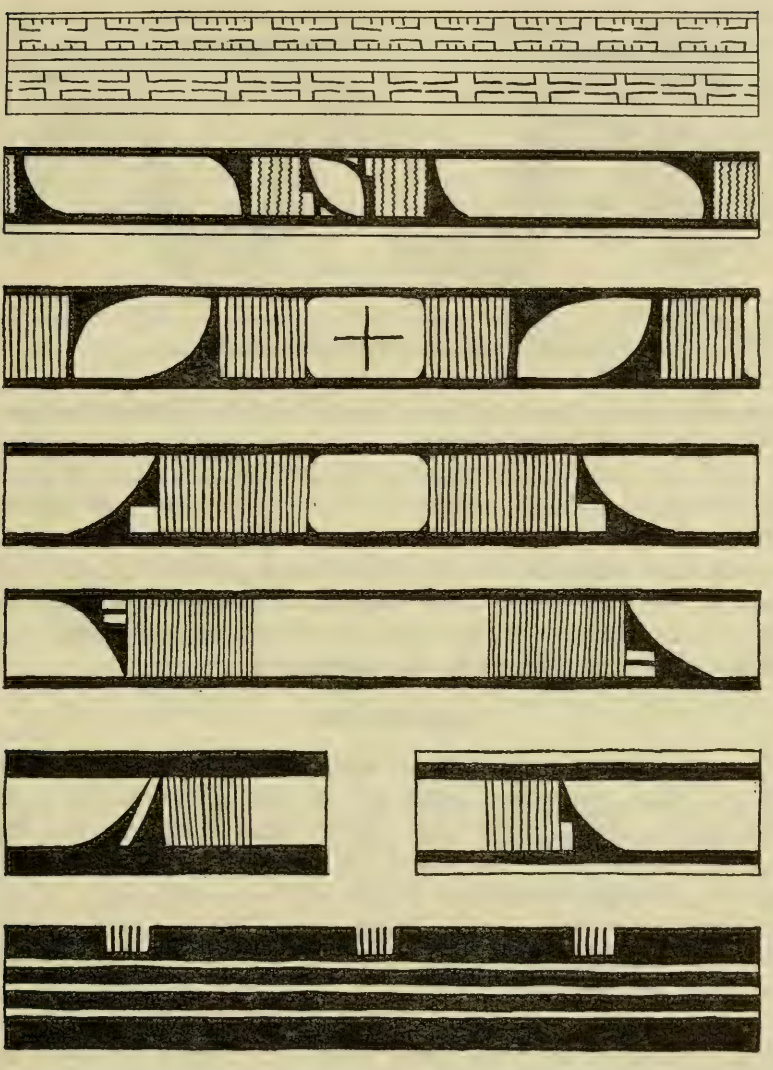


FIGURE 1.—Design index of black-on-white paneled burial urn covers.

closed with a typical undecorated lid. Sherd collections of similar fragments indicate other urns of the same type were present but rare.

A further burial vessel was uncovered bearing a striking double lizard design in raised red ware (pl. 12 and fig. 12). This particular ware is typical of the site and will be discussed in greater detail below. In size and shape the vessel was thought to represent secondary use of a cracked water- or grain-storage jar for burial. It contained a poorly preserved infant skeleton but no offerings, and it

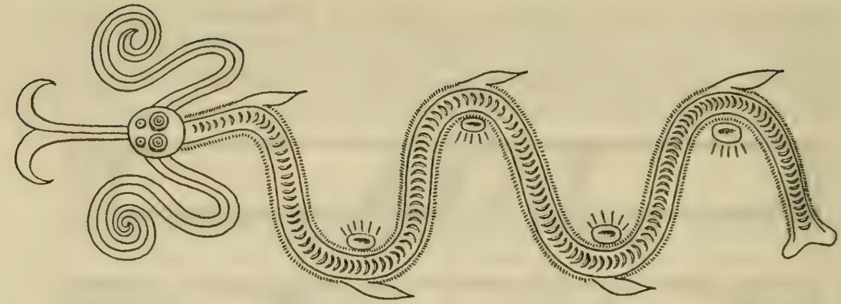


FIGURE 2.—Raised serpent design from burial urn.

was capped by the upper part of an identical vessel bearing fragments of the same double lizard design.

A third complete decorated urn recently has been acquired by the Museo Nacional and is restored completely. This urn is of the same approximate size as the one just described and is elaborated on each side of the opening by a highly realistic monkey (pl. 4). Like several of the other designs, the body of the monkey was formed by pushing outward the soft clay from the interior of the vessel. The limbs are elaborated further by shell stamping.

### PAINTED URNS

Approximately 75 percent of an urn-size vessel bearing a red and black on white geometric design (pl. 4) was in fragments on the surface of the central burial area. Three other fragments, not from the same vessel, also were found on the surface. There was no associated skeletal material, so the use of the vessel is only inferred from location and size. Again, this is a black-bordered red on white ware and not a true polychrome in the sense of having three or more colors as a primary design element. This type of design was not found on any other vessel, but similar designs are known from carafes and small bowls from Coclé Province. Simple bichrome geometric patterns of this type are common throughout the Americas.

The documentation of urn burials in southern Central America is especially important since this is considered to be primarily a later South American trait which may be an indicator of countermigration. On the other hand, this burial custom is well known from the Southern United States, Mexico, and as far south as Nicaragua. From the latter there is a gap in the existence of the trait until La Gloria on the Atlantic coast of Colombia, near the Panama border (Linné, 1929). The urns recovered from Ancon Hill and presently in the Canal Zone museum previously were widely known but undocumented. Similar urns were also reported from Venado Beach

(Lothrop, 1954) and the custom is known throughout the Madden Lake area. I have found burial urns on the Azuero Peninsula containing typical El Hatillo polychrome and Veraguas-style tumbaga eagle pendants.

With future location of urn burials from southern Central America, particularly Costa Rica, and better age estimates, we well may be able to trace direct southward migrations from the cultures to the north.

## BURIAL OFFERINGS

There is a general paucity of funerary offerings at this site. Most of the urns were devoid of pottery, and goldwork conspicuously is absent. Some of the urns contained simple utilitarian pottery, unornamented plates, and small to medium-sized red ware pots. Of these, three plates, two wide-mouthed bowls, and three narrow-mouthed pots were recovered from urns. In each case they were the only vessel in a given urn. Only 8 out of 20 definable urns contained even this type of offering. Since they differ in no way from the general refuse sherds throughout the site they are discussed below under "Ceramics." In only one case, grave No. 2, was a trace of food offering in the form of 6 gm. of carbon found within a wide-mouthed bowl. A few urns contained decorated ware. Metalwork, coral, jade, shell, or other jewelry materials were completely absent.

## FUNERARY VOTIVE WARE

The most remarkable and locally distinctive ceramic type from this site is the brown incised ceremonial ware: exceptionally fine elaborate vessels which betoken a high degree of skill in pottery culture. With the sole exception of a tribowled candelabra, these objects all were found unassociated in the burial area. A combination of their elaborate nature, location, and scarcity is interpreted to indicate that they should be considered apart from the other artifacts as a special class of votive ware restricted to funerary use. Related unpublished specimens from Venado Beach and Madden Lake are present in the Museo Nacional and in several local private collections.

They are all light to medium chocolate brown in color with a fine-textured paste. The temper is of fine grit. Broken edges of the thicker (1 cm.) sections show a green to gray center zone of incomplete firing. Plate 5, the most complex piece, was actually in two separate fragments found more than a month apart and later reconstructed. It is a double-bowled fixture resembling a candelabra (14 cm. high and 24 cm. maximum width) and containing multiple effigies. Each bowl represents a turtle, while each supporting arm terminates in a humanoid face. The center junction of the arms and base bears, on each side, a modeled head with four stylized limbs resembling a howler monkey. The base and underside of the bowls are elaborated with geometrical patterns in incised lines and punched dots. The hollow base is flat on the bottom and contains small pellets which rattle. There are five holes leading to the interior of the base. A record of a very similar vessel found at Venado Beach was published with a suggestion of its possible use as a type of oil lamp (Vinton, 1951). Plate 6 shows two views of a like vessel from the Museo Nacional collection. In this case there is only a single design, a bird. In plate 6, *a*, a slightly different type of bird head, evidently from the same class of vessel, is shown to illustrate the variation in feather elaboration.

A related "single candelabra" is shown in plate 7, *a*, presumably a crustacean or insect. The Museo Nacional has a double vessel in this pattern from Venado Beach and a third was recovered in situ with an open extended burial in Upper Madden Lake. A miniature candelabra is shown in plate 7, *f*, with further ornate brown ware effigies depicting an alligator, bird, and turtles.

Another candelabra type object with three symmetrical radial arms bearing recurved bowls and a central smaller bowl (8.5 cm. radial arm length) is shown in plate 8, *a*. It is decorated all over with an incised and punched geometric design and has a flat-bottomed rattle base. This object was found in situ in plain burial urn No. 1, held in the upraised right hand of an adult male skeleton. The bowl which was lowermost was pulverized and is shown reconstructed in the photograph. The object evidently had been broken and repaired in ancient times. The base was fractured cleanly and fitted together with a white substance which had the gummy consistency of contact glue when first removed from the damp earth, but which became quite hard and brittle after 2 weeks' exposure to the open air. There was no trace of the substance around the find and it is highly unlikely that it could have filtered into an in situ crack.

Small vessels resembling candlesticks are shown in figure 3, *a*. They have a hollow annular base and incised or punched designs (3.5 and 4 cm. high).

Plate 7, *f*, illustrates one of a series of miniature anthropomorphic bottles with covers in the so-called "poison-pot" class. These are of finely surfaced incised brown ware and have holes drilled in both the bottle and cover for the attachment of lids. The bottles hold about 1 fluid ounce, and though no traces of material have been identified from the interior they are thought to have been used for arrow poisons or some type of ritual substance. Some have an extra set of holes for suspension. They are known from this area and from Sitio Conte. A lid from a similar bottle of larger size is shown in plate 8, *d*.

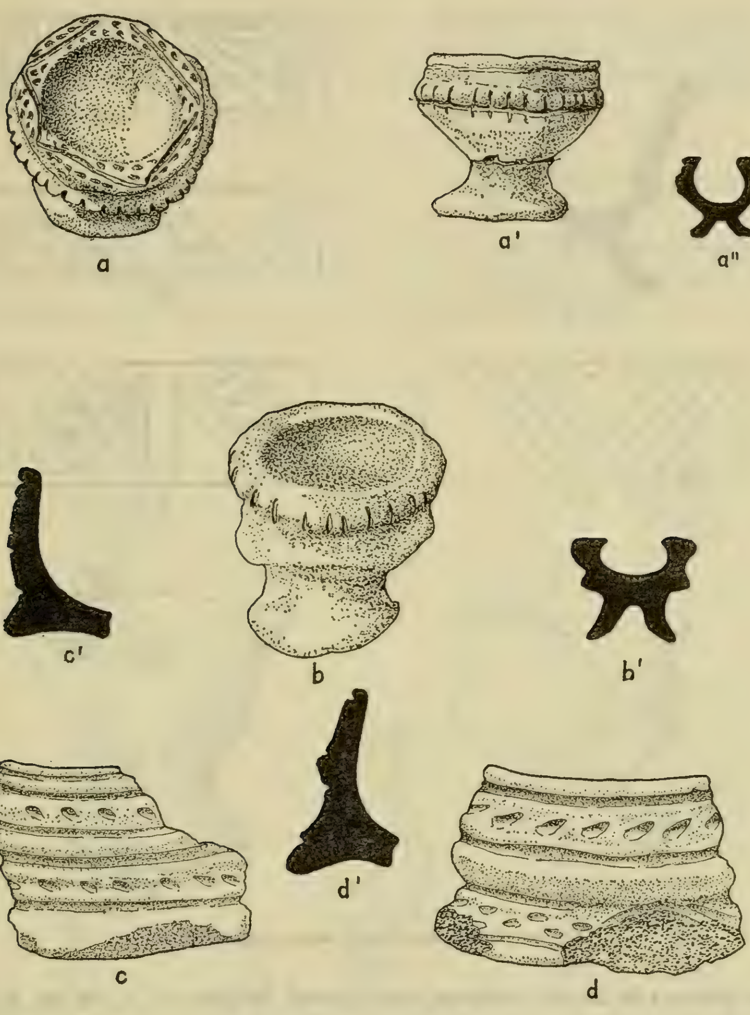


FIGURE 3.—Incised brown ware.

Plate 8, *b*, illustrates a somewhat different effigy, not of brown ware but of a red-orange slipped red ware similar to that discussed under the consideration of decorated sherds below. This is a four-legged effigy bowl, 11.5 cm. high. It is a grotesque animal of compound type, possibly a jaguar with "spots" of reed punched design. Also notable is the indication of five toes on each foot and prominent (pectoral?) musculature. Realism is confused by the broken remnant of a "horn" immediately above the nose.

Figure 4 shows several other vessels of the various shapes and design patterns that occur. Incised chalices or pedestal bowls are

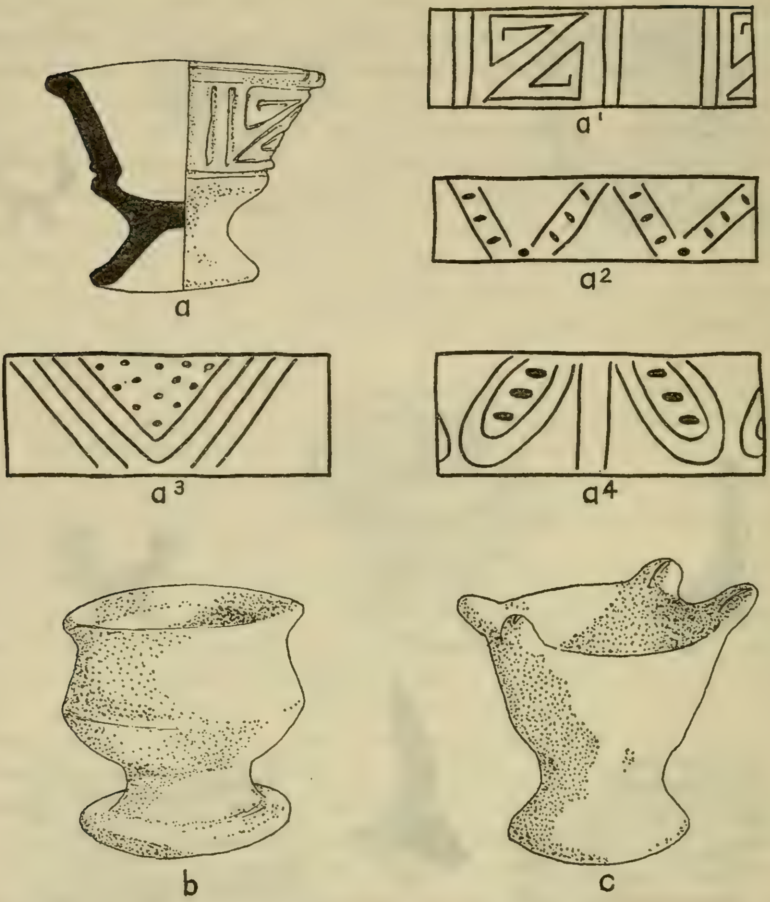


Figure 4.—Incised brown ware pedestal cups.

also present in larger versions, as depicted by plate 8, *c* (14 cm. high). Sherds from similar vessels, having diameters ranging from 12–14 cm., are shown in figure 3, *c*, *d*. Plate 8, *c*, illustrates an exceptionally fine incised sherd from a chalice-shaped vessel which would have a diameter of 16 cm. with 7 cm. outsloping side walls. The rim elaboration is similar to that found on sherds among the scattered debris at Sitio Conte (Lothrop, 1942, fig. 345).

## STONEWORK

There is a general paucity of stonework in Panamá Viejo. Only 27 such pieces, including a large celt from a private collection, were recovered during the course of the study. The objects were distributed throughout the site, isolated and without context, either on the surface or immediate subsurface. Many of the points were found exposed on the surface after heavy rains. A single exception was a small polished celt found within a pottery vessel to be described later.

## POINTS

Fourteen points were recovered of which typical examples are illustrated in figure 5, *a–f*. Most are made crudely of medium yellowish brown jasper, but several are of a rather poor grade of brown to red-brown agate. They consist of a highly irregular flake with a few simple secondary flakes struck off to form a tang, or even a tip.

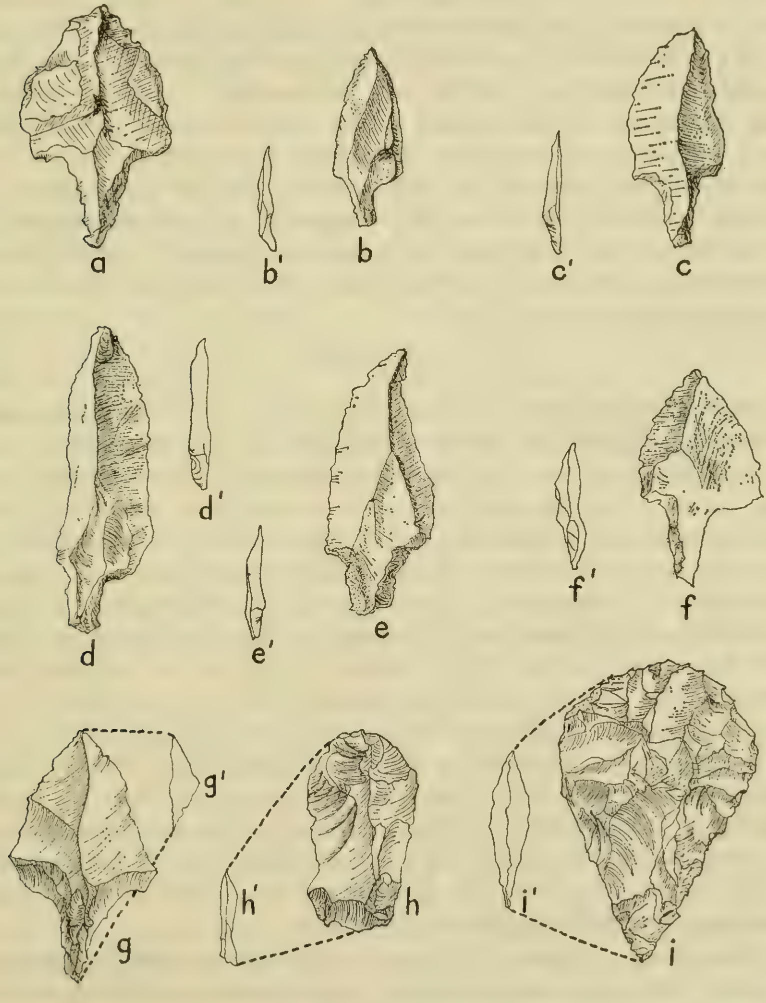


Figure 5.—Flaked stone weapon points.

There is no secondary working of the blade edges. Some examples (fig. 5, *a–f*) have a well-delineated tang on a short blade giving them the appearance of a broadhead arrow point which might be mistaken for the typical drill of this region were it not for the irregular bends of the tang. Cores were sought but not found. These points are identical to those described by Lothrop from Sitio Conte and also represent the typical blades found at Venado Beach and in the Madden Lake area. Unlike specimens from the latter, however, none were found of the petrified wood which represents such a common source of material at the lake, but which is relatively rare at Panamá Viejo. Figure 5, *g*, is an unusual point composed of white translucent chalcedony with a slight yellowish tinge. It is triangular in cross section and in profile, giving it an awkward, heavy appearance. The thickness at the base is almost half the length of the entire point so that it could not have been hafted very successfully. The under surface has the usual irregular planes which suggest a flake struck from a core. There is no secondary reworking except for the tang. As in the Coclé area, there is no evidence that any of these points were hafted to arrows, nor does their ungainly appearance suggest this. It is more likely that they were used as points for small throwing spears or used with wooden "throwing sticks" of which no archeological evidence remains.

## SCRAPERS

Only three objects were recovered which could be considered as scrapers. Figure 5, *h*, shows a small, blunt object made of jasper, similar in all respects to the points described above except that it has no tang and the working end is rounded by secondary flaking. It may represent a reworked point. The object shown in figure 5, *i*, is so dissimilar to the remainder of the stonework that its origin may be seriously questioned. After rains it was found on the surface within the central portion of the burial area and without any adjacent urn fragments, which would indicate it was not an offering. It is composed of a dense medium-gray and slightly glossy agate type of material which exhibits well-delineated conchoidal fractures. It is of a not unusual pear shape, but is unique for this area in that its entire outline has been reworked by secondary parallel pressure flaking of medium-sized strokes, to give it a sharp symmetrical edge in contrast to the usual crude techniques. There is no evidence of either use or hafting, but the general shape and very sharp point suggest a double-faced woodworking adz.

Plate 9, *a′*, illustrates a large scraper of mottled orange-brown agate. The edge was reworked with secondary chipping and the entire piece is smoothly worn down from use. This piece is so nearly identical to those in my collection from the Hopewell North American Indian site at Wakenda, Mo., that a photograph of the latter has been included (pl. 9, *a*). This is distinguishable from the former only in that it is composed of a very fine grade of light tan chert common to Missouri. At the Hopewell site such objects are typical of the culture and are believed to have been held with the flattened edge in the palm and used as deer and buffalo hide scrapers. Many of the celts common to Panama are found in patterns and, in many instances, materials identical to those found throughout the midwestern United States.

## CELTS

Ten celts were recovered from the site, and an additional specimen was located in a private collection. They are all composed of various grades of basaltic rhyolite, but differ greatly in shape and will be described separately.

Figure 6, *b*, shows a pear-shaped celt which has been broken off at one corner. It is crudely polished at the distal end with a smooth wedge-shaped blade, and a proximal end of rounded cross section has been left rough. The specimen in the private collection is identical to the above except for its larger size of an overall 8 inches. These celts represent the most common type reported from Sitio Conte, and Lothrop considers the incurved sides as representative of that culture. A common variant of this type (unillustrated) has straight sides and a somewhat broader proximal end. Like the others, it is polished only in the lower half. All are composed of a basalt having a beautiful even pattern of whitish inclusions giving a "salt-and-pepper" appearance.

The object in figure 6, *a*, is apparently the proximal end of an oval celt of a basaltic syenite, smooth but unpolished evenly throughout, and perfectly symmetrical on both longitudinal axes. Lacking the distal blade end, it is possible that this is an unused mealing stone or similar object.

In figure 7, *a*, *b*, are shown medium-sized celts of gray rhyolite completely unlike the others and unreported from Panama. They are blunt and only roughly shaped out like the earliest hand axes of the European Paleolithic. It has been suggested to me that these are prepared blanks which awaited further finishing. Since little is known of the exact stages through which these celts were prepared, no definite hypothesis can be given. It is known, however, that the very earliest and the very latest Stone Age cultures produced similar celts: the earliest when grinding techniques were not developed, and the latest when availability of metals made the refinements of technique no longer worth the amount of labor involved. On the other hand, it

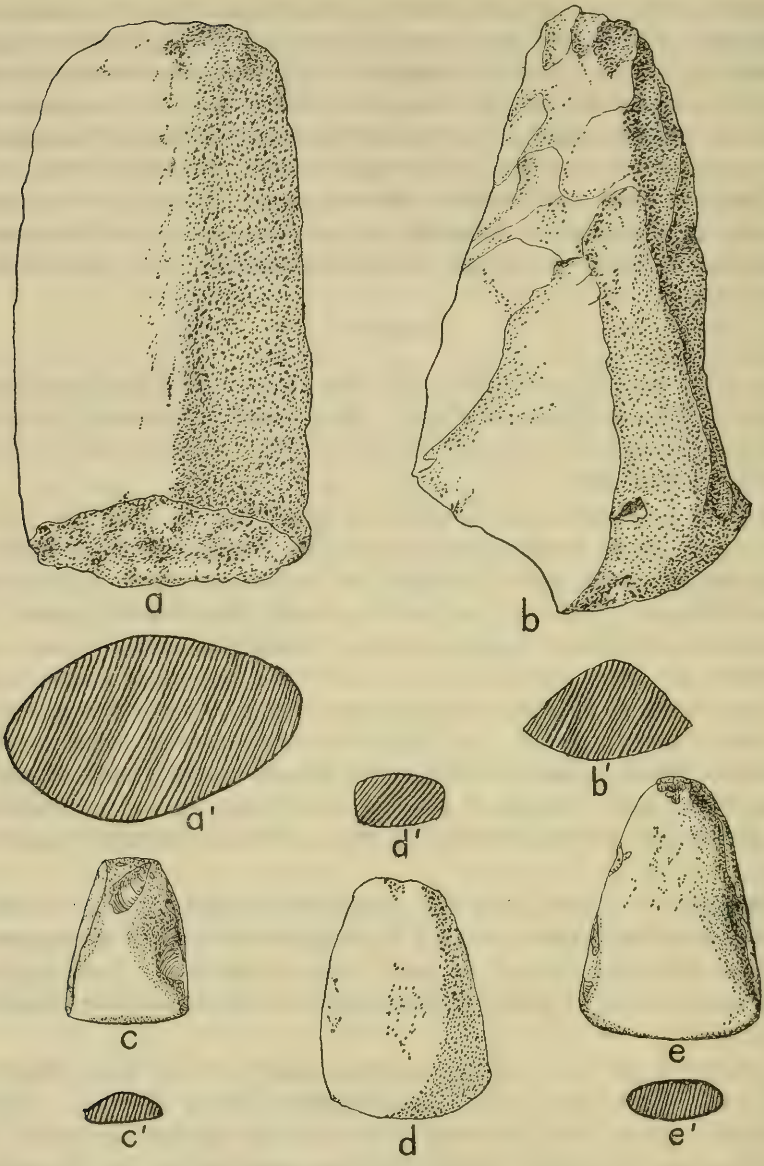


Figure 6.—Stone celts.

presumably is possible that they are artificial inclusions from some preceramic culture in the region. At any rate, definite statements will have to wait the development of further information on Panamanian stonework.

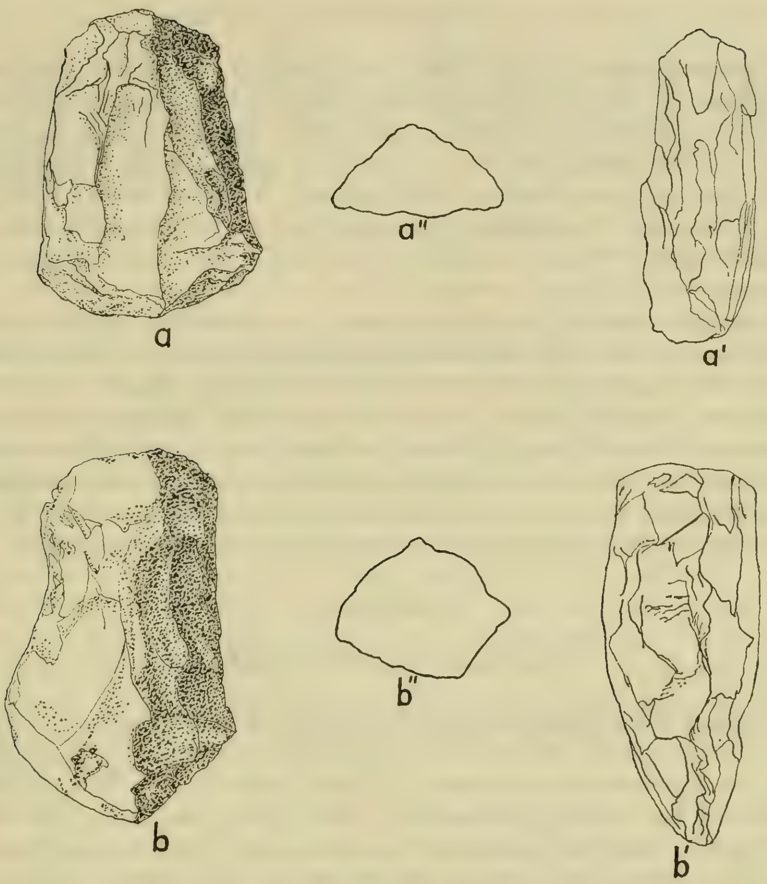


Figure 7.—Stone celts.

Figure 6, *e*, represented in the collection by two examples, shows a more or less standard wedge-shaped celt, polished in the lower three-fourths. The celt in figure 6, *d*, is composed of a somewhat more loosely textured basalt and has vertical edge faces so that only the distal end is a cutting edge and the successive cross sections are progressively larger rectangles which have very slightly bowed sides. It has a diagonal cutting edge like some of those also found at Sitio Conte, and is smoothly polished throughout.

The remaining two celts, of which one is illustrated (fig. 6, *c*), are small, dense, dark black basaltic material, wedge-shaped and given a high polish throughout. The cutting edges are quite sharp and without evidence of use. One of these was found inside a small pottery vessel described under "Ceramics" (pl. 10, *b*).

### METATES

A single metate and its mano were found in the Museo Nacional collection (pl. 9, *b*). This is a three-legged type, not uncommon farther to the west. It is of a coarse badly weathered tufa, and the legs have been partly broken. It should be noted that in the Madden Lake area simple oval metates are common. They are usually without legs and consist of a shallow depression worn in the naturally shaped irregular rock without secondary reworking. None were present at this site.

It may be remarked again that there is a general paucity of stonework at Panamá Viejo in comparison to similar sites in this region. There were no chisels, drills, smoothers, polishing stones, or arrowshaft straighteners present as at Sitio Conte or Venado Beach, and no carved stone objects are known to have been found. There were many smooth waterworn stones distributed throughout, one weighing approximately 10 pounds and roughly mano-shaped, but they in no way differed from those found randomly in the creekbed nearby.

## CERAMICS

### NATURE OF THE SAMPLE

Because of the deranged nature of the site it was felt that accurate sherd counts would not yield sufficient valid information to compensate for the inordinate amount of time involved. In fact, a brief testing of this method indicated it might yield completely false information unless the entire site was excavated down to sterile soil. In places where the earth grader removed high spots and turned around to make a new pass, there might be hundreds of burial urn parts, while in the furrows a few feet away there would be scarcely any. Similarly, it was evident that no stratigraphic analysis was possible. Accordingly, only those sherds having decoration were collected from the surface, the immediate subsurface during the investigation of burials, and several random pits about the periphery of the site.

In the burial area, almost all the sherds were from large urns but with a slight admixture of both decorated and undecorated portions of smaller vessels. Presumably they were from both burial offerings and general debris. In the residence area there were many more sherds from smaller vessels. The sherds in both areas, exclusive of burial urns, were predominantly (50:1) undecorated red ware. Those that were decorated in no way differed from their counterparts in the other areas. Several 2-foot squares were dug to a depth of 3 feet around the periphery of the site in order to get an idea of its extent. They are indicated in the site diagram (map 2). In general, sherds from these pits were very sparse, often less than five in each hole, so they were added to the general pool.

The pooled sample consisted of 450 decorated sherds of which 339 were body sherds, 32 were rim pieces, and 79 were miscellaneous painted sherds. These will be analyzed in detail during the discussion of their respective pottery types.

### SIZE AND SHAPE OF VESSELS

Only one vessel was recovered complete, though it was severely broken by earth pressure. The restored piece is a very large, round-bottom, squat pot measuring 40 cm. in diameter. It is discussed in detail below. Several of the larger sherds would seem to belong to a vessel of approximately the same size. Modern day undecorated examples can be seen in almost every hut in the mountains throughout Panama, where they are used for water and grain storage or to prepare the alcoholic "chicha." Of the smaller sherd pieces, the majority have so little curvature that they must certainly have come from at least moderate-sized vessels of unknown shape; the contours are shown with the sherd figures. The size is also attested to by identifiable portions of incised effigies which must have occupied an area at least the size of our intact example. It would be very interesting to know the range of shapes and uses of these pottery types and why they alone were given the distinctive stylistic treatment not found on smaller vessels.

### RED WARE

The general, and presumably utilitarian, pottery is a plain, undecorated, hard, dense vessel of medium red-brown color. It is tempered with fine grit often bearing minute siliceous deposits. The slip varies from red-brown to a decidedly red-orange color and is easily washed off in water. Refiring of sherds in excess oxygen at 500° C. for 30 minutes causes no color change, indicating a state of full oxidation.

The most common shapes are the small globular "beanpot" with a rounded bottom, a larger and more stable wide-mouthed bowl, and a rather thick and heavy plate of very shallow form. There is a simple recurved rim without secondary elaboration or decoration so that cross sections are of uniform width. Thickness averages about 0.6 cm. Typical shapes are shown in figures 8, *a–f*, and 9, *a*, *b*.

Surface finish varies from a smooth to a rather roughened appearance with undiagnostic tooling marks on both the interior and exterior. These at least indicate the use of some type of stone or wood object or, in some instances, corncobs to smooth the vessel surfaces before drying. Firing is often uneven with isolated black smudges

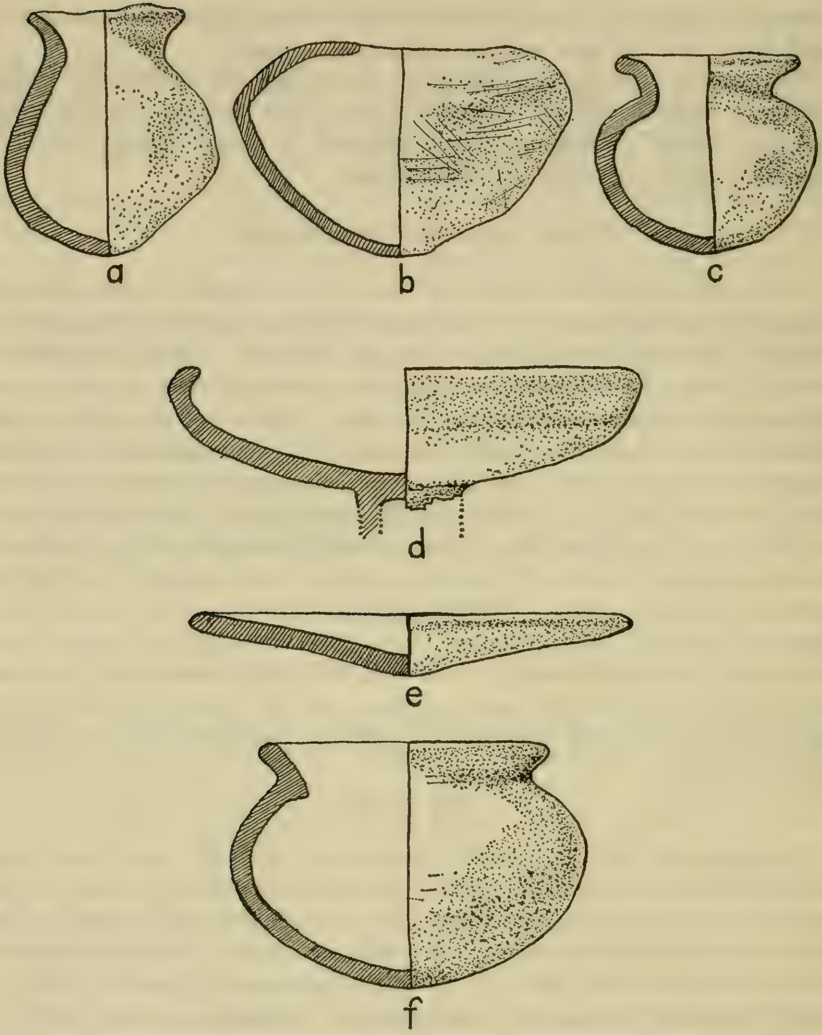


Figure 8.—Red ware.

on surface areas. Many of the vessels show charring on the rim or interior, indicating their contact with fire while in use. Most of the intact examples illustrated were recovered from the burial area, and several from inside urns. These in no way differed, however, from the thousands of fragmentary samples found throughout the site. Redware vessels were obtained both in average utility sizes of 1–2 quart capacity and in miniature sizes identical in shape but having a capacity of from 2–4 ounces.

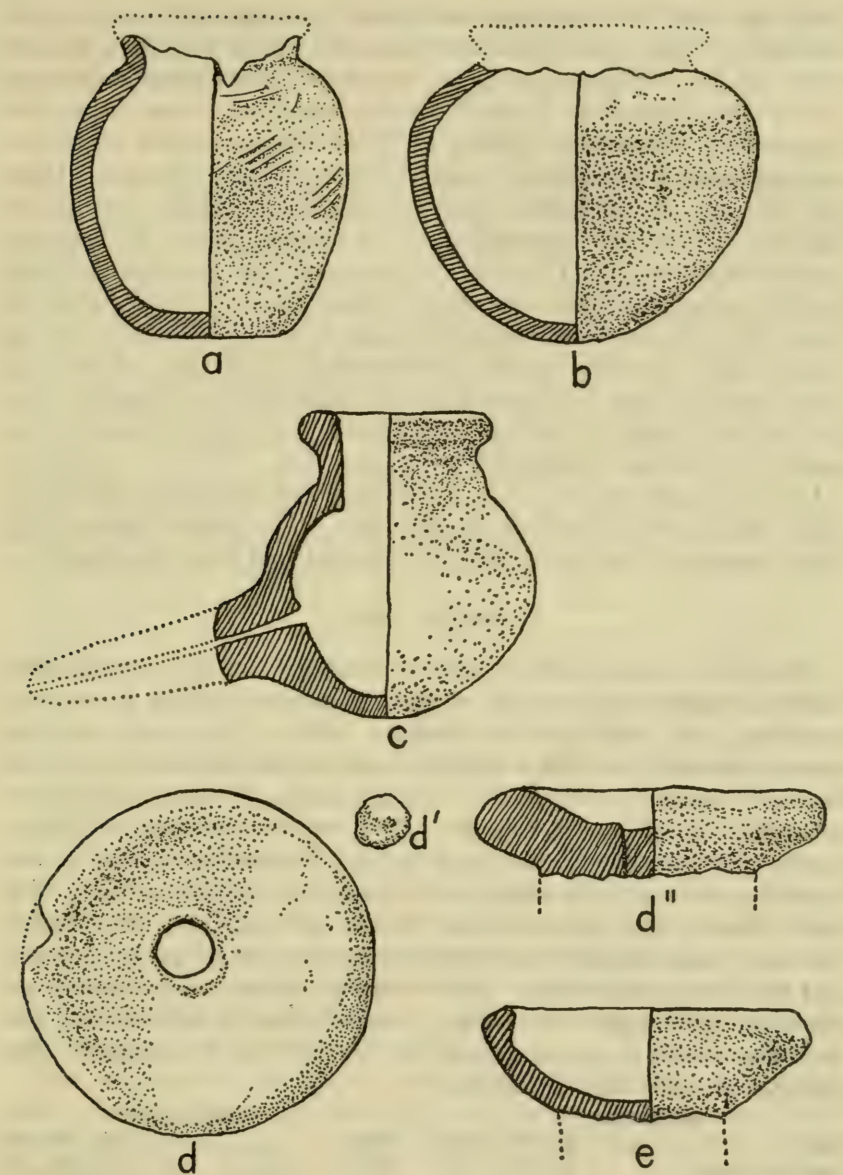


Figure 9.—Red ware.

Several vessels with unusual shapes for the area were recovered. They all were present, though infrequent, at Sitio Conte. Plate 10, *a* (left), shows a broken-rimmed gourd effigy vessel or fluted bowl of a somewhat finer paste and smoother finish than is usual. At Sitio Conte they occurred in both red and in smoked wares (Lothrop, 1942; figs. 266, 271) and were considered to be primarily a late characteristic. They have also been found at Cupica, Colombia (Linné, 1929; fig. 53). Plate 10, *a* (right), shows a spouted vessel somewhat cruder than those from Coclé. Another vessel, of coarse brown unslipped clay, is shown in figure 9, *c*. This bottom-spouted vessel also was represented in Coclé by a single identical vessel (Lothrop, 1942; fig. 337, *a*). It resembles many of the classic "baby feeders" of Europe. A red ware pedestal plate, or frutera, 22 cm. in diameter, is shown in figure 8, *d*. Plate 10, *b*, shows a small red ware beanpot with several rows of appliqued nubbins. It was found in juxtaposition to burial No. 5 in the shell lens and contained a small, polished, wedge-shaped celt, described under "Stonework." This type of pot has been described from Veraguas (Lothrop, 1950; fig. 62). A rather massive red ware tripod, differing from the usual variety in the outcurving position of the legs, is illustrated in plate 10, *c*.

One small dish (fig. 9, *d*) had a neatly drilled center hole which was filled with a plug of unbaked, buff clay. The rough base of this piece suggested that some form of pedestal had been attached.

## BROWN WARE

The characteristic pottery type of this site is a brown ware with decoration applied by a variety of combinations of incising, mechanical punching, and appliqued or modeled relief. The group includes several related types which employ more or less the same techniques but vary widely in color and, to a lesser extent, in the physical characteristics of the paste mixture. The color is most commonly a medium brown or red brown (5/4 and 4/4 Munsell scale), but a considerable portion of the sample runs toward a redder tone (5/6) or to darker browns and lighter red-free browns (4/2 and 6/3). Presumably this is a characteristic of the particular paste on hand at the moment, and the firing temperature, rather than of distinctive pottery types. Sherds of each major color variation were broken in half and one portion was refired in excess oxygen at 500° C. for 30 minutes. The changes of color are as follows:

| Munsell color | | Refired color | |
|---|---|---|---|
| Red | 2.5 YR: 4/6 | Red | 2.5 YR: 4/8 |
| Reddish brown | 5.0 YR: 4/4 | Red | 2.5 YR: 4/8 |
| Dark reddish brown | 5.0 YR: 3/3 | Yellowish red | 5.0 YR: 4/6 |

Similarly, there is variation in the surface texture. Most of the material is a fine-textured, fine-grit tempered paste which was smoothed on the surface to a moderate polish, leaving no surface pits visible to the naked eye and impervious to water. A substantial number of sherds, however, have a more open grainy surface texture which appears to be of the same paste material left unpolished.

None of the brown wares are covered with slip. There does not appear to be enough evidence to break this ware down into subgroups on the basis of consistent variations.

### PAINTED WARES

*Black and white on red ware.*—Fifty-six isolated sherds were recovered which fall into a group of black, white, and red simple geometric designs in various color combinations. For the most part these consist of rim pieces with concentric bands of white and black on the edge of a red ground (pl. 11, *a*; fig. 10, *b*). The bands may be from less than 1 cm. to more than 6 cm. in width and may be single or multiple. This ware is probably related directly to the paneled urn covers. Several variants were found. Four sherds were from white vessels bearing alternating red and black bands, the reverse color sequence of the above (fig. 10, *e*). Another four sherds (fig. 10, *a*, *h*) were of red ware which was decorated with concentric black bands only; no white was present. Three sherds are present from the near center of plates or shallow bowls having a white panel with black geometric designs (fig. 10, *c*, *i*, *k*). Some or all of the rims may belong to this style, but unfortunately none of sufficient extent were recovered to justify this conclusion. The ceramic paste in both these and the rim sherds is identical to that of the usual red ware. The red paint appears to have been applied first as a slip, somewhat heavier than on the simple vessels. Whites range from a pure white to a cream white and appear to be the most labile.

All of the sherds in this group appear to be related and, by the number of them recovered, represent a possible "type" painted ware of this culture. Not enough sherds of the variants are present to warrant classification at this time. None are true polychromes, since the design proper utilizes only two colors superimposed on a self-color background. As such, they are related to the paneled red ware of Coclé and presumably represent cultural acquisition earlier than true polychromes.

*Red on brown.*—Two sherds were recovered of the same brown ware present throughout the site, but having a narrow red band. Both of these are rim sherds (pl. 11, *d*). Their place in the pottery classification is unknown.

### RIMSHERDS

The 32 rimsherds recovered can be divided conveniently into three groups on the basis of profiles (fig. 11).

The first group (*a–l*) shows a slight inward curve. Shapes are those of plates and shallow bowls. All except one are slipped red ware and all have some manner of plastic decoration.

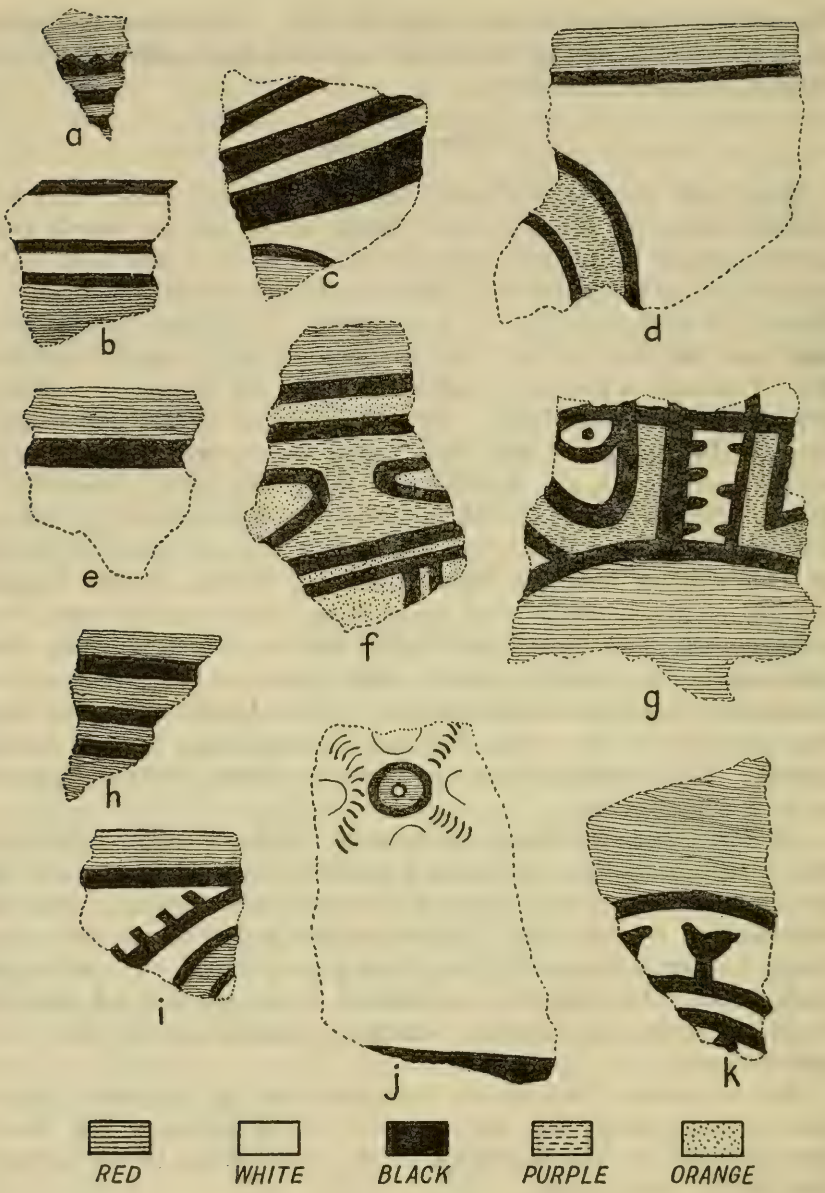

a
b
c
d
e
f
g
h
i
j
k
RED
WHITE
BLACK
PURPLE
ORANGE

Figure 10.—Painted wares.

Group two (*m–u*) has vertical rims and the vessel sides may slope outward to an inflection point before recurving inward. The shapes are narrow, and wide-mouthed, globular vessels of medium size. Only two are slipped; the remainder are incised brown ware. All have more elaborate designs than the former group.

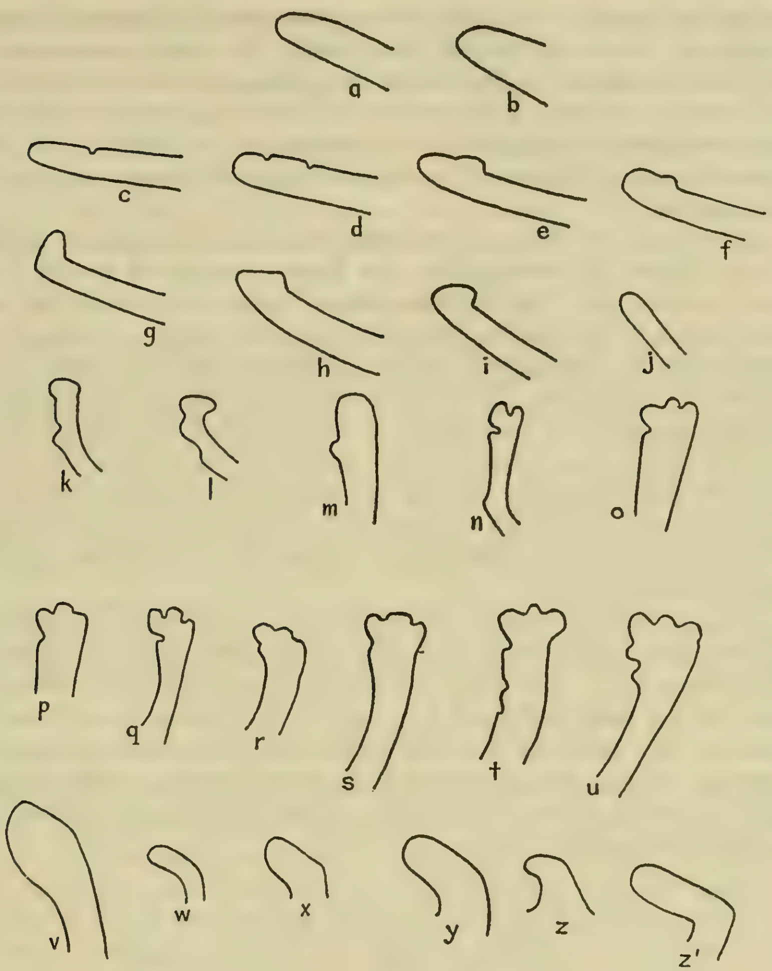


Figure 11.—Rim profiles.

Group three (*v–z′*) consists of severely recurved rimsherds, sometimes flattened along the inner edge. They are of slipped red ware and either not decorated or decorated by simple shell stamping along the edges. They represent conventional wide-mouthed globular pots.

## DECORATIVE TECHNIQUES

### DESIGN MOTIFS

Segments of serpents and lizards are the most common design motifs of the brown wares. From the sherd material, it is impossible in most cases to distinguish between the two. A serpent from a large burial urn is illustrated in plate 3 and figure 2. This particular serpent appears to be a variety of sea creature; the illusion is created mainly by the long curling "antennae." No truly representative creatures are known in Panama or its waters, but one is reminded of the common yellow-bellied sea snake (*Polamis platuria*) which may have been elevated by prehistoric imagination to the level of some superstitious significance. Several sherds would appear to be of the same pattern.

A very realistically executed lizard or iguana is illustrated in plate 12 and figure 12, representing the finest example of incised relief ware from the site. The backward-facing position of the head appears rather unusual for Panama and gives the whole design an appearance reminiscent of Quetzalcoatl motifs in Mexico such as that on the facades of Xochicalco. This is also frequently the position in which Chinese dragons are portrayed. Lothrop (1942; figs. 43–44) illustrates a bird in this position from a painted Coclé plate, but there does not seem to be any relation between the above and the serpent or lizard motifs from Sitio Conte or Veraguas. The collection also includes fragments of other similar designs, all of which are approximately the same size.

A nearly complete parrot was found (pl. 13, *a*), which, judging by its curvature and thickness (10 mm.), originally formed a portion of a very large urn. This is an example of the modeled-relief technique in which the body is formed by pushing the clay outward from the inside of the vessel so that the actual wall thickness remains unchanged. Again, one is reminded more of Mexican motifs than of the polychrome phases of Panama. A similarly formed monkey urn was discussed earlier.

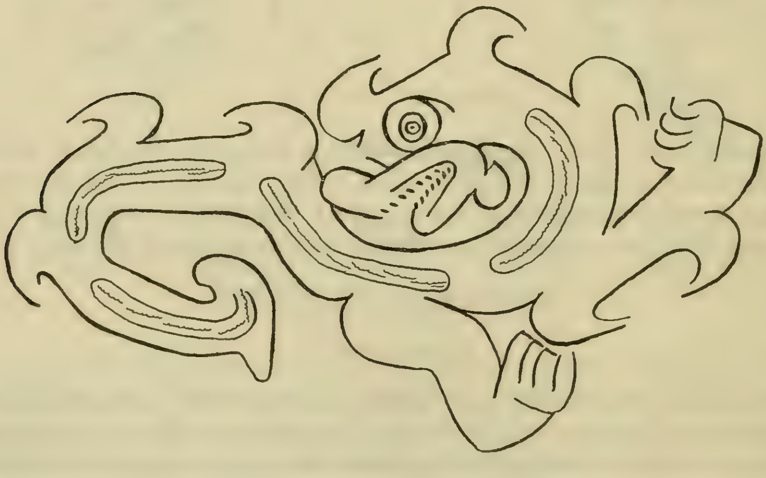


FIGURE 12.—Detail of lizard effigy jar.

A water bird is shown in plate 13, *b*, in a much cruder, but accurate, simple linear incising. It probably represents the white heron which may be seen on the beach next to the site and is common through the Panama Gulf region.

Other animal motifs are present in the ceremonial ware mentioned in connection with burials. These are the turtle, alligator, and monkey, and humanoid three-dimensional figures. Several portions of such figures are present in the collection.

### LOCATION

From the few restorable vessels it appears that the biological motifs usually were placed separately on opposing sides of the vessel. In all cases the same pattern was present on both sides of the upper half to one-third of the vessel. On some, the jar was divided into four vertical panels by appliqued ridges into four alternating blank and decorated vertical panels similar to the sections of an orange.

On the other hand, pots with geometrical designs appear to be filled across the entire visible outer surface leaving only the bottom and interior undecorated. The rims were further elaborated on the top or either side, but the rim and body decorations are not contiguous. There is no evidence of any zoning of decorative fields.

### ANTHROPOMORPHIC EFFIGIES

Four polychrome vessels were found which have humanoid features. They are basically similar and have in common the ridging to indicate hair style and the painted "mask." Beyond these features, however, they are quite dissimilar in ceramic type, paint quality and color, and in stylistic execution. They do not appear to be the product of a single artist, nor to have the unity of similar vessels to the west.

Plate 15, *b*, is unquestionably a typical "Coclé-type" humpback effigy in coarse slipped red ware with white panels to indicate face and arms. The face is elaborated by a purple mask and the arms and breastplate are decorated with geometric black lines in the typical Sitio Conte manner, but they were too poorly preserved to photograph well. The protruding mouth and nose as a single unit makes it resemble a monkey more than a human; an interesting combination when combined with the humpback. There are small raised breasts and no evidence of masculine structure.

In plate 21, *b*, is shown a miniature vessel in which the body is barrel-shaped without arms. This is a better grade of slipped, polished red ware with a soft white slip over most of the body. The decorations in red and the mask in purple are edged with black material and all are applied over the white. In paint, this resembles the Coclé specimens, but the style is different.

Figure 13 is a very fine vessel from the Museo Nacional collection. It is a red ware vessel with elaborate panels which relate it more to

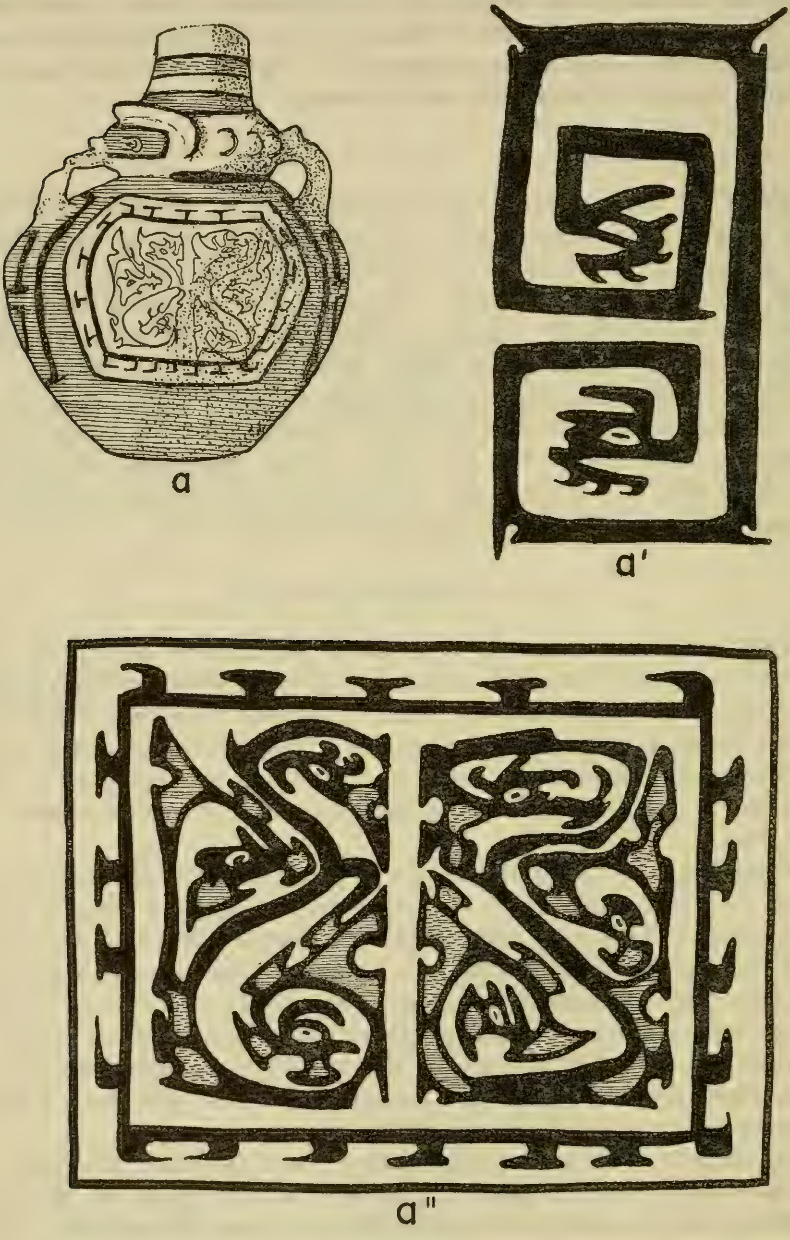


Figure 13.—Polychrome effigy jar (Museo Nacional).

the Azuero Peninsula than to Coclé. Both modeled hands are placed to the mouth. The head is white slipped with a ridge to indicate the hairline and a high conical hat decorated with alternating red and purple stripes. There are six symmetrical body panels, redrawn flat in the illustration. The front panel (*a′*) is repeated on the back and consists of scrolls in black on the natural background. The inner portions of the scrolls end in stylized "alligator god" heads. The side panels (*a″*) are placed over a white background and consist of elaborate convolutions ending in alligator god heads and having fillers of small red and purple wedges.

The vessel shown in figure 14 is made of a finer buff paste, completely slipped with a hard, polished cream-white surface. It is

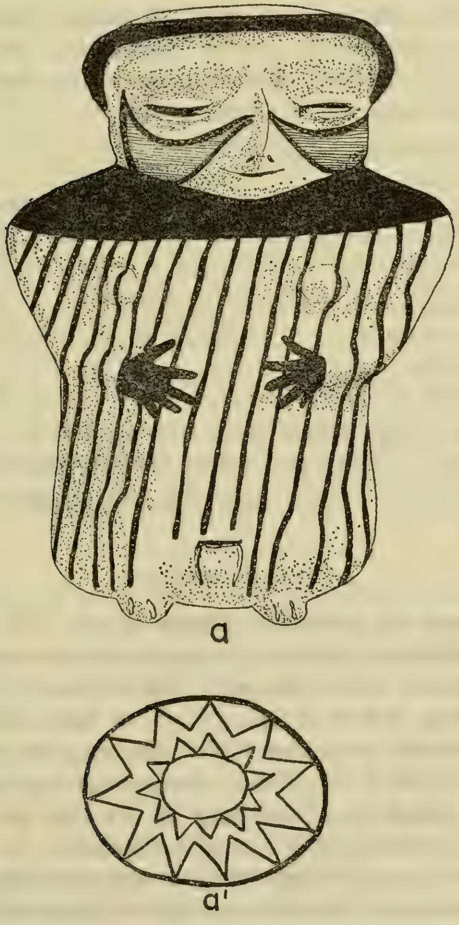


Figure 14.—Polychrome effigy jar.

decorated in black, except for the red shadows under the eyes. The manner of hair indication is similar to that above and the feet are like those on many Veraguas buff ware effigies. The style, however, seems completely unrelated to any Panama pottery published heretofore and seems more lifelike than the usual humanoid effigies.

### INCISING

The main design technique consists of incising with the thumbnail or a pointed tool in a linear fashion to form various animal drawings. These are then elaborated with incising or punching by various mechanical tools so as to fill in the design or further elaborate the body outlines. Punched holes, shell marks, thumbnail marks, and various combinations of markings made by a hollow reed have been identified. The reed marks are in patterns of full circles, concentric circles, circles with central dots, and half circles. Many designs are executed with a mixture of several techniques. The frequency of appearance of single and mixed designs is as given below and as illustrated by selected examples in plates 16–18:

| | | |
|---|---|---|
| Number of pooled decorated sherds | | 339 |
| Number incised | | 328 |
| Linear | 185 | |
| Punched | 67 | |
| Shell | 38 | |
| Reed | 13 | |
| Circle-dot | 12 | |
| Concentric circles | 10 | |
| Half circles | 19 | |
| Fingernail | 5 | |

Raised ridges along incised lines are present in some examples, but most designs are clean and would indicate incising the "leather-hard" rather than in wet clay, causing uneven grooves due to subsequent polishing.

### SURFACE DESIGNS

Surface designs are shown in plates 19–20. Of the out-sloping plates and shallow bowls, the most frequent rims are those with molded ridges and/or one or more concentric incised rings. The ridge may be above the ring, below it (pl. 19, *a*), or both above and below (pl. 19, *e*). In some examples either the edge or the ridged edge was scalloped (pl. 19, *b*, *d*). Other designs are simple shell stamping (pl. 20, *i*) and punching or notching of the rim (pl. 20, *d*). They are apparently notched in the leather-hard state.

Of the vertical, and chiefly brown-ware rims, designs consist of geometrical patterns of alternating incised lines and punched dots (pl. 20, *a*–*c*). In contrast to the former group, incising appears to have been done in the damp state, leaving a well-defined ridge which can be seen in the photographs. The patterns occur all over the external surface exclusive of the bottom and do not appear to be organized in zones. Some designs are more elaborate incised circles and swirls (pl. 19, *g*), like those on the votive ware. On others, an applique ridge is diagonally incised in imitation of rope, or has crude ridging and edge notching.

### RELIEF MODELING AND APPLIQUE

Other plastic decorative techniques frequently employed are relief modeling and applique. It is the former which really gives this pottery its completely distinctive appearance and one cannot but be impressed at the high degree of refinement in this technique. Occasionally the entire animal body is raised above the vessel surface, outlined with deep linear incising, and paneled with reed or shell markings. In the thick, heavy sherds the modeling often is pressed outward from the inner surface; in smaller sherds the inner surface is smooth and flush. Relief is used also for heads alone, or portions of heads such as jaws and the beaks of birds. Applique is used in much the same manner where a sharper raised edge is required; most frequently in the application of eyes. The term "Modeled Relief Brown Ware" has been applied locally to this type of pottery found on the Venado Beach site, a term believed to have originated with Dr. Lothrop during his excavations there. The frequencies of these decorative techniques are as follows:

| | |
|---|---|
| Appliqued | 8 |
| Modeled | 3 |
| Appliqued and incised | 124 |
| Modeled and incised | 35 |
| Total plastic decorations | 170 |

### TRADE WARE

Seventy-six sherds were found having decorations in two or more colors. Of these, 20 were true polychromes in red, white, black, purple or, more rarely, orange. Several represent portions of typical Veraguas-Coclé types both in designs and materials. Most appear to be segments of fruteras and plates with serpent and similar motifs, including the "coral snake rim" (fig. 10, *d*, *f*, *g*). Similarly, a portion of a frutera pedestal was found. One sherd has a raised "nubbin" with four supports (fig. 10, *j*) decorated in red and black on a highly polished buff ware of foreign import. This represents a type ware of Parita and related sites on the Azuero Peninsula. A sequence of progressive stylizations are known whereby this is shown to be a frog effigy (Biese, 1961). This definitely is not a locally manufactured piece and is known to occur as trade ware in both Coclé and Veraguas.

A complete widemouthed vessel (pl. 15, *a*) and nine sherds are of red designs on a white ground, identical to the Coclé redline ware.

In the absence of further material from the site, these pieces are all considered to be trade ware brought in from the more westerly provinces. Unfortunately, the lack of correlated finds in graves or in context with incised wares makes it impossible to establish them as contemporaneous with the other artifacts. It is of significance, however, that the redline ware is considered to be definitely a late characteristic of Sitio Conte in Coclé.

Several of the red ware vessels merit individual discussion. In plate 21, *b*, are shown two red ware vessels, a small dish and a spouted vessel, both with white panels bearing black scrolls. While similar to Coclé vessels, at least to me they appear to be imitations or copies of the same; an impression perhaps only gained by handling the two side by side. They are cruder, heavier, and slightly different in surface texture than the usual Sitio Conte ware and may be of local manufacture.

Plate 21, *a*, also shows a widemouthed pot and a rather massive, dense polychrome pedestal enclosing rattles. Both of these have a coarse, medium buff ground color with designs in red and purple edged in black. In style and finish they do not resemble previously reported Panama polychromes.

## SECONDARY USE OF ARTIFACTS

Sufficient direct evidence for the repair and re-use of damaged vessels often is lacking. However, the ordinary rim chipping of vessels in use, which was later smoothed by grinding, is seen frequently. When evidence of major repairs is found, it is an occurrence worth detailed notice. When a vessel is used for burial it may be taken as some evidence of a frugal or materially poor culture or, conversely, one lacking a highly formalized burial tradition. This is in marked contrast to many cultures in which the grave furniture is new and constructed specifically for the purpose.

The lizard motif incised relief vessel shown in plate 12, *a*, was originally recovered as burial No. 7, where it was found within a conventional undecorated urn. This round-bottomed vessel is 40 cm. in maximum diameter by 30 cm. in maximum height, with its inflection point located at five-eighths of the latter. It is of a medium red-brown paste with a smooth unpolished surface. There was a portion of an incompletely oxidized brown to dark-green identical vessel used as a cover. The ridges, which divide the vessel into four panels, and the crest of the lizard exactly match up with the cover design with a 5–10 cm. overlap all the way around. This vessel top has a shallow flat shoulder ending in a throat only 15 cm. in diameter around which there is evidence of a vertical rim having been present at one time. The bottom has a 19 cm. curving fracture with 7 smooth holes drilled along the edges. This was obviously for the placement of ties for mending by the "crack-lace" method previously unreported from Panama. As mentioned above, the jar contained a 20-cm. plate and an infant burial. It appears that a utility grain- or water-storage jar, with a not uncommon design, developed a crack and was repaired. The vessel mouth was then widened so that the plate and burial (or secondary burial) could be placed in it and covered with the broken top of a similar vessel. Linné (1929) summarizes the distribution of the technique and concludes it is primarily of western South American origin with singular exceptions in Nicaragua and Costa Rica. It is completely unknown from Mexico and Guatemala.

## SPINDLE WHORLS

The 15 spindle whorls from the site (pl. 22) were treated separately in a recent publication, to which one should refer for more detailed information (Biese, 1961). All of the whorls were found exposed on the surface after heavy rains, and were distributed sporadically and without context in both residence and burial areas. They are all made of the same red-brown to brown clays and tempering techniques used for the general ceramic remains. The surface treatments fall into two distinct groups: the coarse orange-to-red-to-brown slip of Panamá Viejo red ware, and the unslipped, smooth brown wares. One whorl (No. 3) was a partially smudged tan of coarse clay.

By physical characteristics, the whorls fell into three groups:

*Simple.*—Nos. 10–11 are simple flattened balls of slipped clay bearing a center core and representing the simplest type of spindle weight. No. 12 adds the further refinement of a secondary smaller mass atop the first. In Nos. 1–2 this mass is more distinctive.

*Mammiform.*—Nos. 5, 7, and 9 have a more pronounced upper mass of clay. They also differ from the preceding by being composed of a smoothly polished dark-brown clay.

*Incised.*—The remainder of the whorls are all similar in that they are decorated with radial incising or punctate designs.

In the publication cited above (Biese, 1961) it was pointed out that the weights and diameters of these whorls placed them in two groups such that the rough approximation of their inertia gave a sevenfold difference. It was suggested that this was evidence for a more advanced weaving technology in which either two different fibers were spun or two different weights of fibers were made for different purposes.

## MISCELLANEOUS CERAMIC OBJECTS

A number of miscellaneous clay objects were recovered from the site. Figure 15 shows two single note incised brown ware whistles, both probably representing alligators. The broken tail of another whistle, probably representing a bird, is illustrated in plate 23 with other miscellaneous objects found at the site.

## CLASSIFICATION

There is an insufficient collection of material upon which to base a definitive classification scheme. This is especially true when it is known that related pottery is present throughout the Venado Beach-

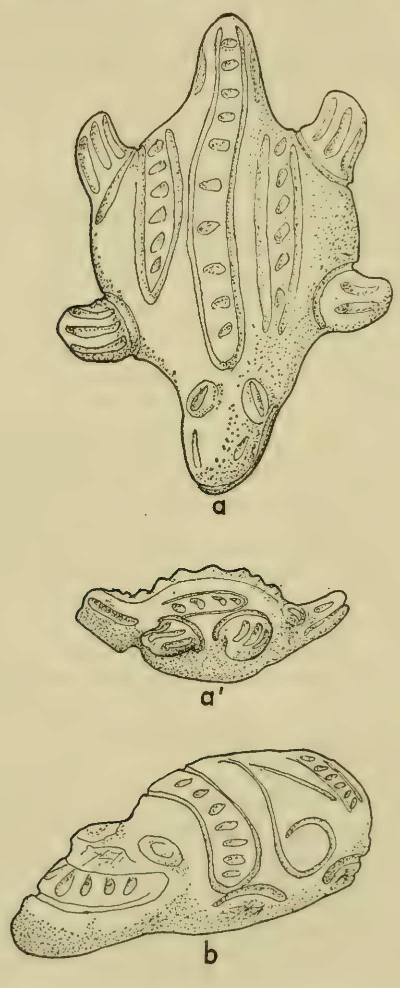


Figure 15.—Brown ware whistles.

Madden Lake areas and its accumulation will necessitate revision of any system. Furthermore, we may well find that stratified deposits will presage a system of classification having temporal as well as geographical value in the determination of cultural parameters. Nevertheless, a summary of the ceramic collection presented herein may be given in the form of a preliminary classification. This is intended only to be descriptive of the various broad groups of pottery recovered and to be used as an aid for further comparisons; to divide it immediately from the equally broad cultures previously described from Panama.

I. Panamá Viejo Red Ware

II. Panamá Viejo Decorated Brown Ware

1. *Incised brown ware.* (Pl. 8, *e*.) Identical to those sherds of the same name from Sitio Conte. The paucity of examples would suggest it is neither native to, nor representative of, either of these areas.
2. *Geometric brown ware.* Including its red-brown variants. The design is geometrical and incised with secondary elaboration by punching and mechanical stamping with shell and reed.
3. *Biometric-relief brown ware.* (With red-brown variants.) The designs are animal representations in bas-relief outlined by incising and elaborated by secondary stamping. This also would include the smaller designs in which the representation is not actually elevated from the vessel surface.

III. Panamá Viejo Black on White Paneled Red Ware

IV. Panamá Viejo Ceremonial Ware

Including those elaborate vessels with geometrical designs and/or three-dimensional modeled or appliqued sculptures (modeled-relief brown ware).

V. Panamá Viejo Urn Wares

1. *Red urn ware,* and the common red-brown covers
2. *Relief urn ware*
3. *Black on white paneled red urn ware* (covers only)
4. *Red and black on white urn ware*

The remaining painted sherds are represented by only one example each and cannot be classified. They are presented only for descriptive purposes.

## DISCUSSION

### GEOGRAPHICAL DISTRIBUTION

The most important material from this site, for the tracing of horizontal distribution, is the decorated brown ware. From the Pearl Islands, Linné (1929) illustrates a nubbin sherd (p. 99), incised animal feet (p. 81), and alligator and serpent designs in raised brown ware with similar techniques in reed marking, shell marking, punching, and incising (p. 90).

Raised brown ware sherds with animal designs are illustrated from Punta Patiño, near the Gulf of San Miguel, deep in the Darien (Linné, 1929, p. 154). It is possible that cultural influence extended as far south. With the single exception of Linné's work we have no data from the Darien region of Panama. More tenuous identification exists in the case of his scalloped profile rim from Triganá, Colombia (p. 33), which resembles our figure 8, *d*.

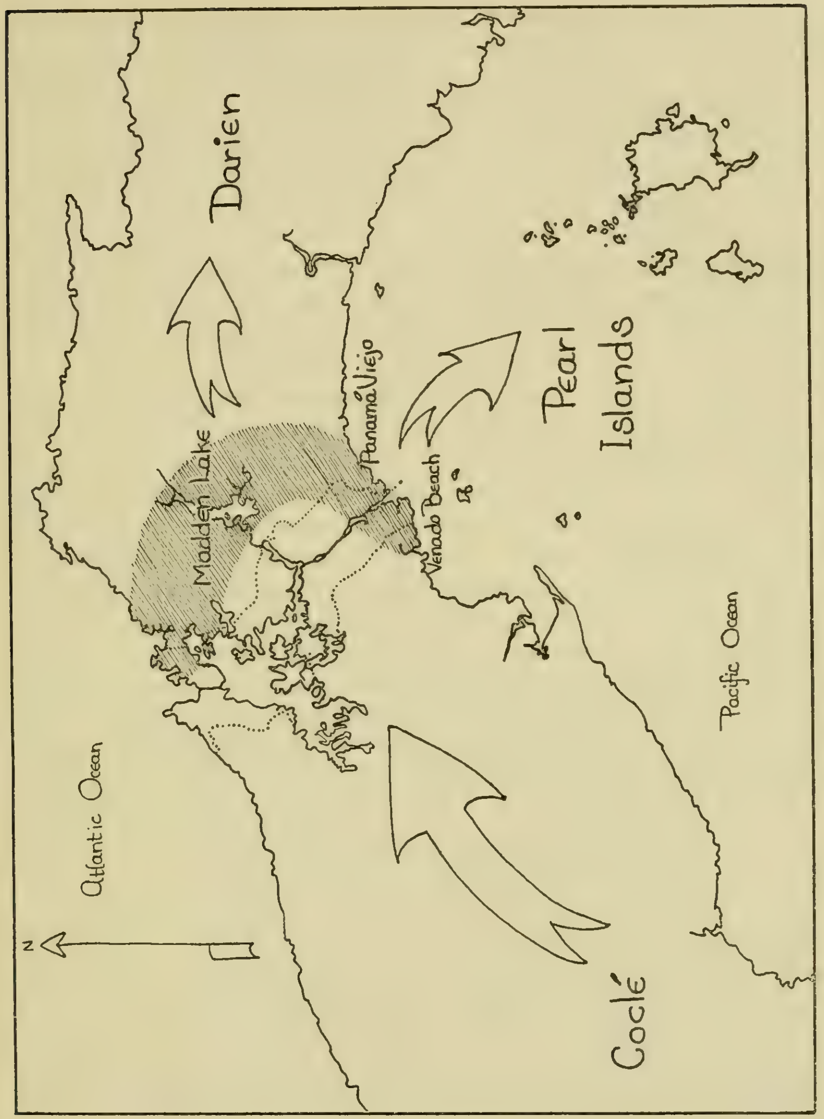
Recent work in Cupica, Colombia (Reichel-Dolmatoff, 1961), has demonstrated identical fragments of our modeled-relief brown ware as well as Cocle humpback polychrome effigies and other trade ware from the Late period at Sitio Conte. This gives us a known, active distribution area of over 250 miles to the southeast, into the Darien jungle via land. This country is considered to be almost inaccessible today even with our most modern equipment. The obvious route is the sea passage via the Pearl Islands (which have similar pottery types mentioned above), a considerably shorter distance. The intermediate vessel shown by Reichel-Dolmatoff (1961, fig. xiii, 3–4) also more closely links the modeled-relief brown ware of the present site with that of the Santarem in Brazil as described by Palmatary (1939).

Across the Isthmus of Panama, the brown ware type pottery is well known among local archeologists from Venado Beach; several typical sherds and stone points are shown in plate 24. Similarly, the same pottery is found across most of the Madden Lake region in a broad zone up to 15 miles east of the Canal. Plate 25 shows typical surface finds selected from several dozen sites exposed during the dry season when the Lake drops. Plate 25, *a*, is an otherwise typical point recovered unassociated from the Fort San Lorenzo area near Colón. These illustrated artifacts were selected from hundreds because of their similarity to others presented herein.

From the distribution of similar pottery, points, and burials, related cultures are seen to have occupied a wide band across the entire Isthmus from the Atlantic to the Pacific, covering, and slightly to the east of, the area occupied by the present day Canal Zone. It extends out to the Pearl Islands in the south and into an as yet undetermined area of the Darien. This distribution is reflected in map 3.

## CONTACTS AND MIGRATIONS

Cultural contact definitely is shown with the westerly provinces, primarily Coclé, through the admixture of polychrome vessels and sherds. Unfortunately, these sherds are not stratified, and range from periods which are considered to be characteristic of both early and late Sitio Conte. Identifying goldwork and whole vessels were recovered from Venado Beach but have been published only in preliminary form (Lothrop, 1956). Recent work has suggested Coclé


Darien
Pearl Islands
Madden Lake
Panamá Viejo
Venado Beach
Atlantic Ocean
Pacific Ocean
Coclé
N

Map 3.—Distribution of Panamá Viejo cultural traits.

polychrome might be much more widely distributed than was originally thought. It is present in other foci, rather than being restricted to trade ware, throughout a portion of the Azuero Peninsula and adjacent southeastern Veraguas. Until further details are available, we can only state with certainty that the Panamá Viejo culture had limited trade contacts with her classical polychrome neighbors to the west. There is no evidence to suggest contact with the more westerly Chiriqui or Costa Rica.

Contacts to the east are suggested by the distribution of pottery to Darien, if not actual settlements of related cultures. Further exploration of the Darien will be necessary before we are enlightened on this point.

In contrast to actual contacts, the presence of shell marking and incised spindle whorls tends to suggest a combination of vertical and horizontal transmission of traits somewhere in the as yet remote past of Central American migrations. Parallel shell edge stamping around the vessel rims is known in Panama from the Girón site in Azuero (Willey and Stoddard, 1954), where it was found in the possibly contemporaneous levels of the Santa Maria Phase, and from both the Santa Maria and early Coclé levels at Sitio Conte (Ladd, 1957). Shell stamping is also known from the Sarigua Phase at the Gulf of Parita (Willey and McGimsey, 1954), though in this case the pottery paste is quite different and there is a considerable time lag between the estimated dates of Sarigua and Coclé. Shell stamping is a widely distributed trait throughout Central America.

There are present two other traits of possible vertical significance, i.e., urn burial and crack-lace pottery mending, which may represent evidence of either direct migrations or counter migrations with South America at some time in the history of this culture's predecessors. These have been discussed more fully above, and we are now beginning to believe urn burial may represent a direct migration of much more ancient origin and distribution throughout Mesoamerica than has been thought previously. The evidence offered by polychrome pottery traits is still more meager, but despite the difference in stylistic development one is often tempted to draw relationships between Mexico, Panama, and Peru.

## CHRONOLOGY

In attempting to assign a date to the culture represented by this site we have two essential cultural links: polychrome trade ware and the Venado Beach site. Both of these have been subjected to recent reexamination, and some doubt exists. When originally described (Lothrop, 1942), the classic polychromes of Coclé were thought, on the basis of style, to be representative of a unique local focus with wide trade contacts and of a relatively late date, i.e., ca. A.D. 1300–1500. Later unpublished local work indicates the possibility of wider distribution and independent production in several areas of Central Panama. Stratigraphy at the Girón site and Sitio Conte would seem to indicate a greater time span for the entire complex of decorated brown ware and polychrome phases.

Still more recently (Lothrop, 1958 and 1959) a Venado Beach urn burial has yielded a radiocarbon date of A.D. 227 ±60 (Yale—125) which was cross-dated with early Coclé polychromes. Dr. Lothrop has suggested that this is too early and may represent a sampling or technical error; the reader is referred to the above-cited two papers for a thorough discussion of these and other dates from Panama. In 1961 he announced a new Venado Beach radiocarbon determination of 1000 years B.P. (Groningen No. 2200) from material found in similar circumstances (i.e., charcoal from within plain red ware burial urns). Once a date is accepted, we still have to decide the relationship of this site to Venado Beach and the Lake area. On the basis of trade wares present, Panamá Viejo has very little, the Madden area almost none, and Venado Beach a rather high proportion. Similarly, the absence of both jewelry and trade ware points to an economically poor or dependent tribe associated contemporaneously with Venado Beach when the latter was the ceremonial or ruling center. For at least a tentative assignment of relative dates in Panama I am inclined to accept the Venado Beach radiocarbon date with a slightly earlier date for Panamá Viejo and a still earlier one (ca. 50–100 years) for Madden Lake.

## INTERPRETIVE SUMMARY

A new Early Christian Era culture is described herein from Central Panama. It is composed of a rather widespread group of related tribes which shared common burial and ceramic traits, and were distributed over the Canal Zone, the Pearl Islands, and the adjacent territory to the east. The composite tribes perhaps are affiliated loosely through common ethnic origins and maintain Venado Beach as a "capital." Their characteristic economy was based largely on shellfish and offshore gathering and limited agriculture supplemented by small-animal hunting. Life appears to have been rather sedentary and peaceful with limited trade contacts and possibly irregular hazardous trips to the immediately adjacent east and west. Weaving was practiced. Pottery skills were developed to a high degree, but full classic polychromes are not indigenously present. Burial is moderately ritualistic with special classes of pottery, but not formalized to a high degree, and may occur in urns, open extended, or secondary fashion. Deep level graves are not present, but a suggestion of mutilation occurs. The complicated skills of jewelry and gold working, ceremonial stonework, and permanent structures are absent; this more from economic position than artistic development, since realistic clay sculpture is present. The identifying traits are: (1) urn burial; (2) incised relief brown ware with zoomorphic patterns; (3) certain red and brown ware combinations with shell, reed and punch markings; (4) elaborate ceremonial or votive ware; (5) incised spindle whorls; and (6) simple flake points without secondary elaboration except crude tang formation and ground and polished stone celts in a variety of patterns.

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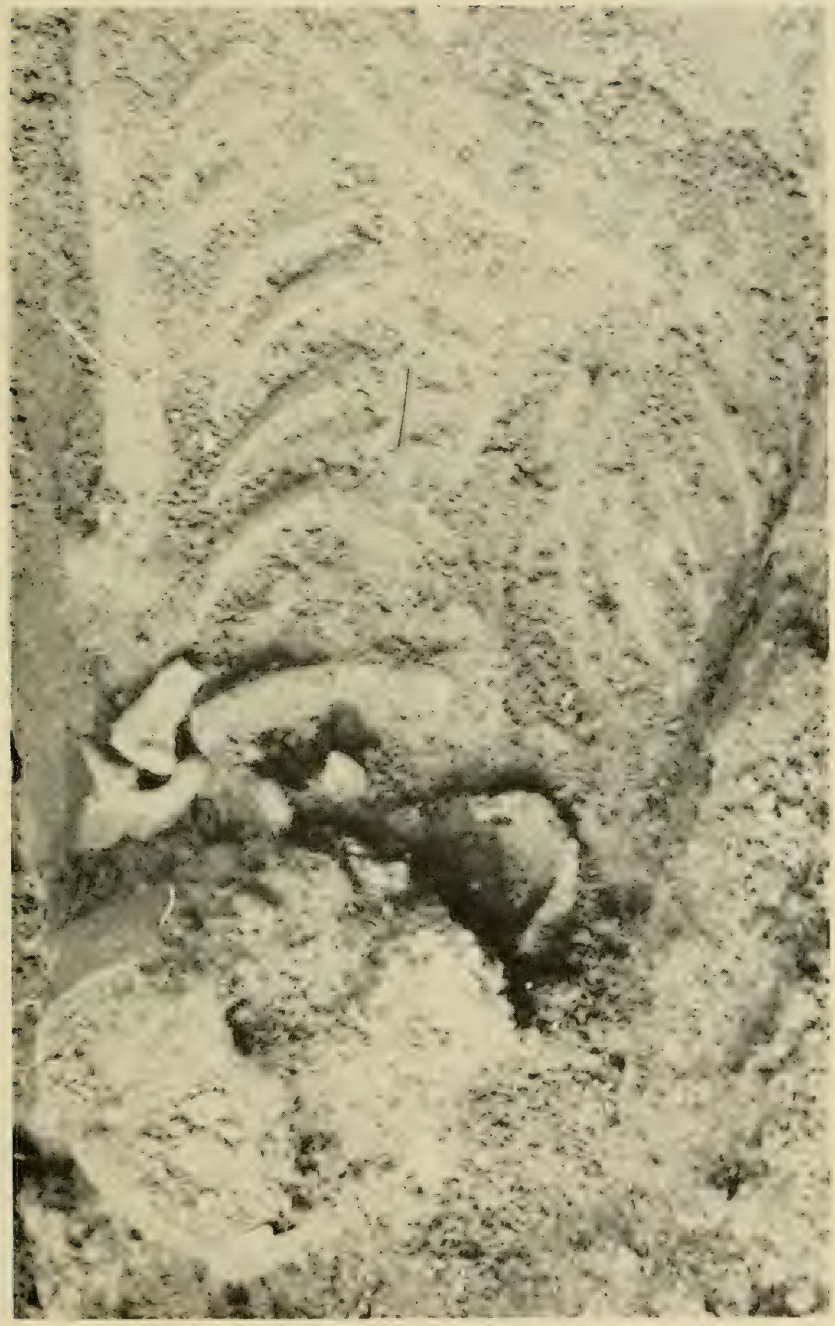
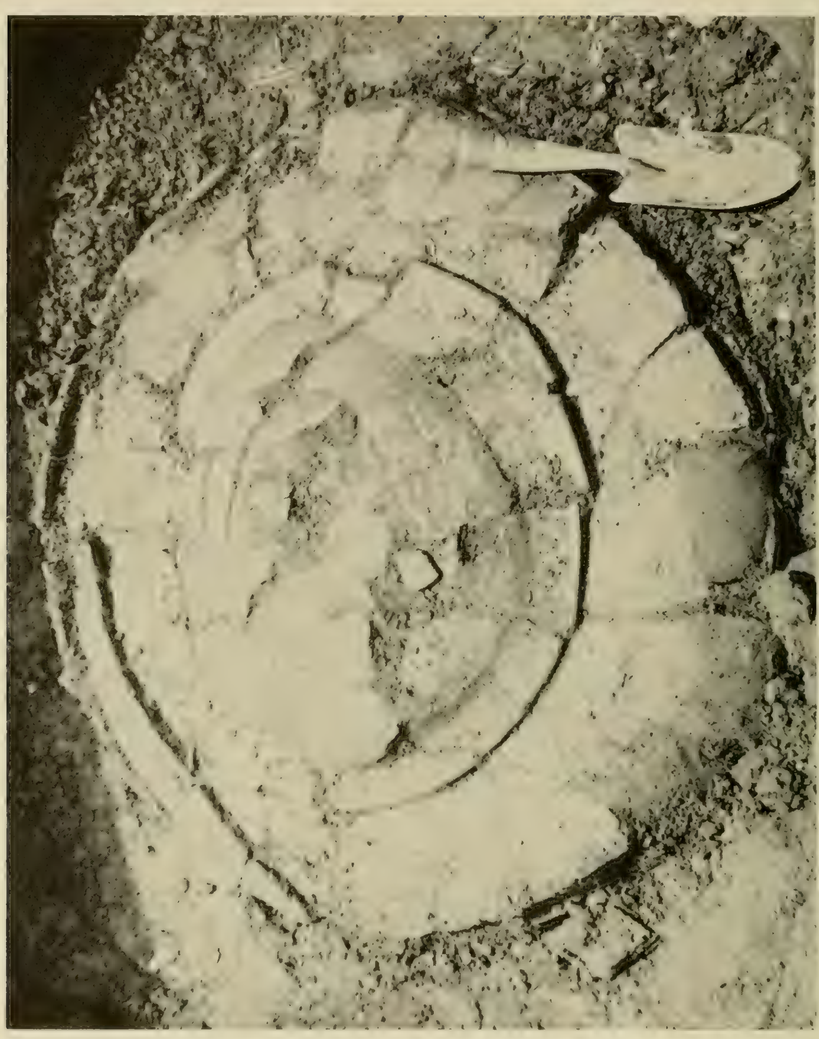
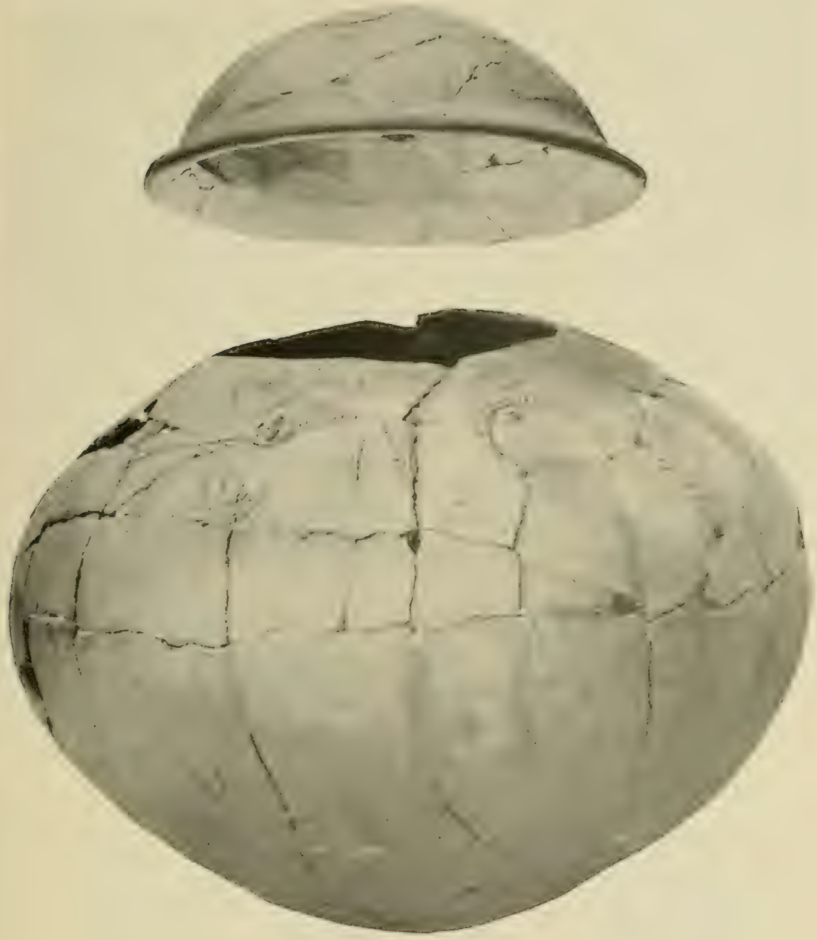


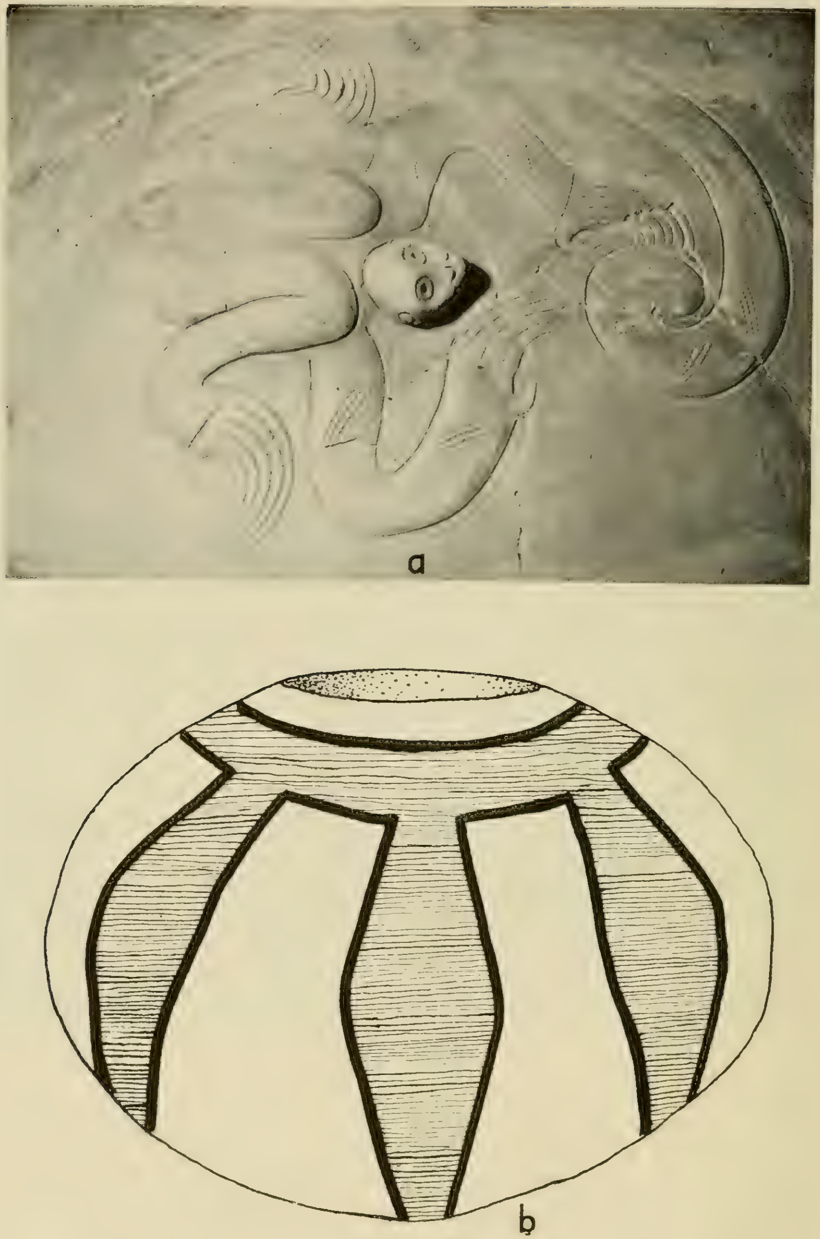
Sacrifice burial.



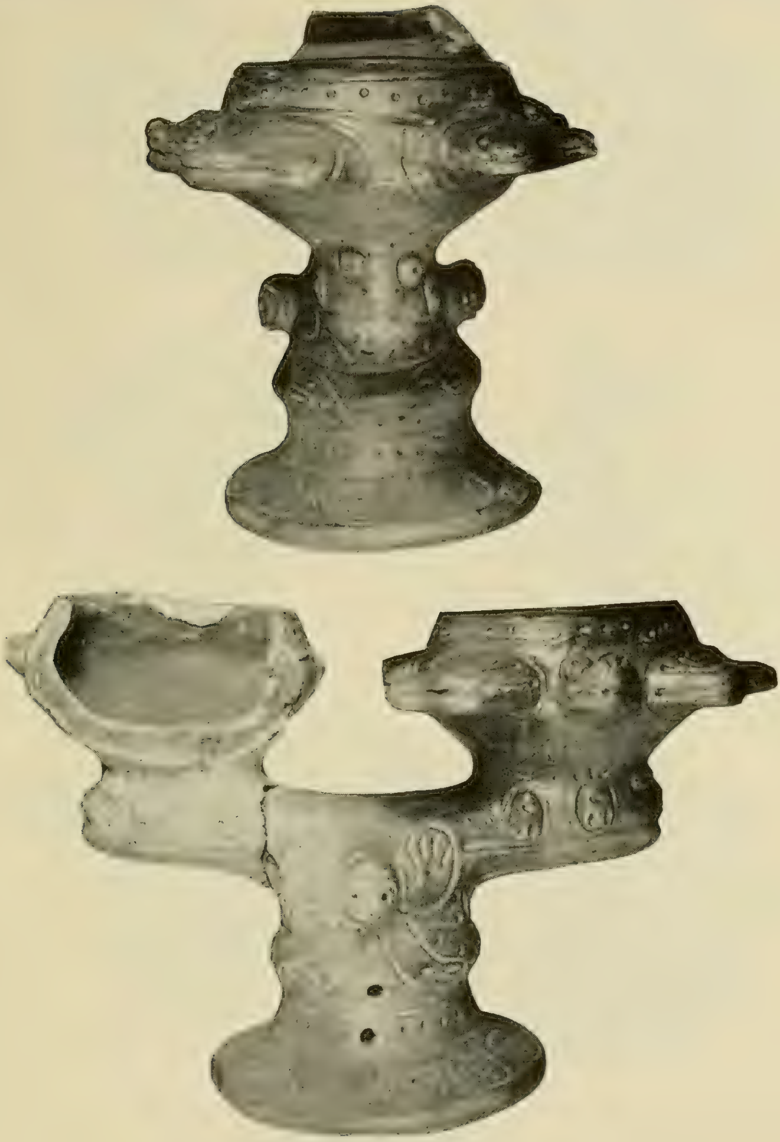
Serpent burial urn.



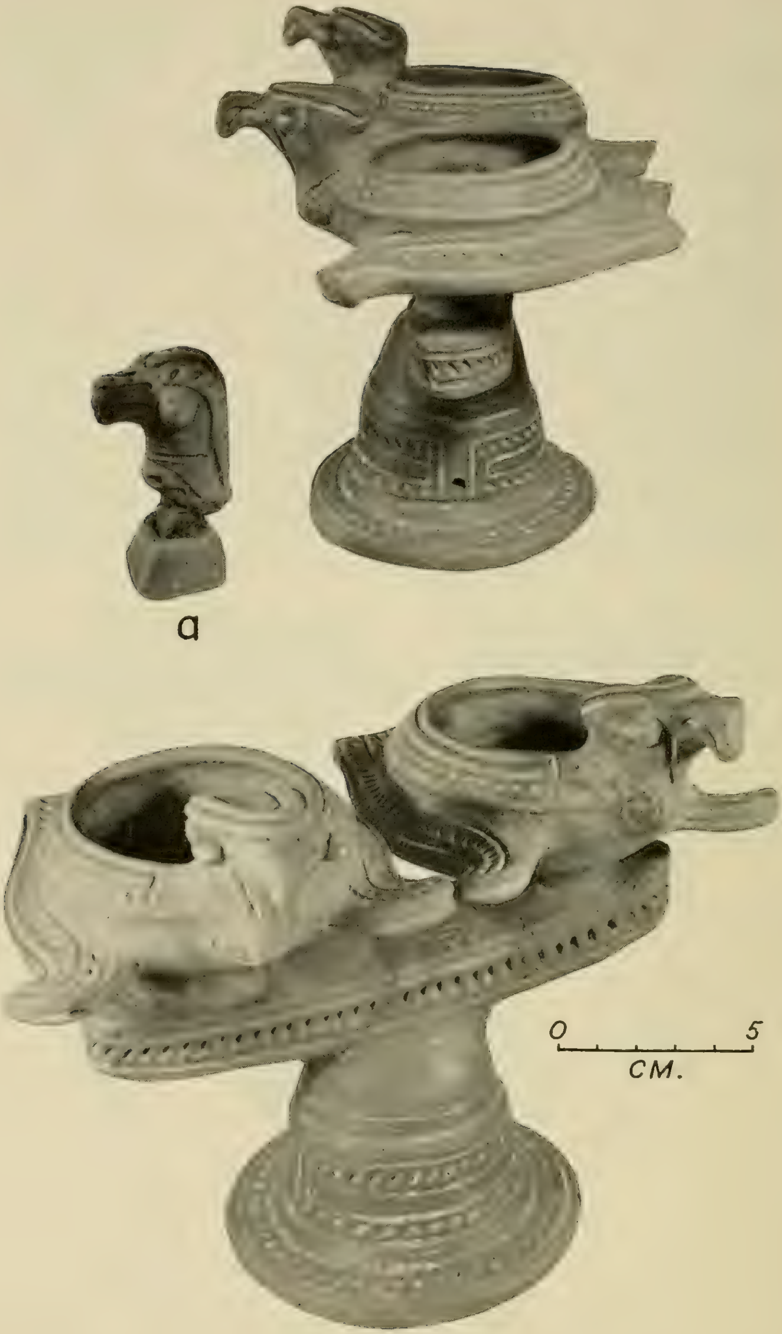
Serpent burial urn.



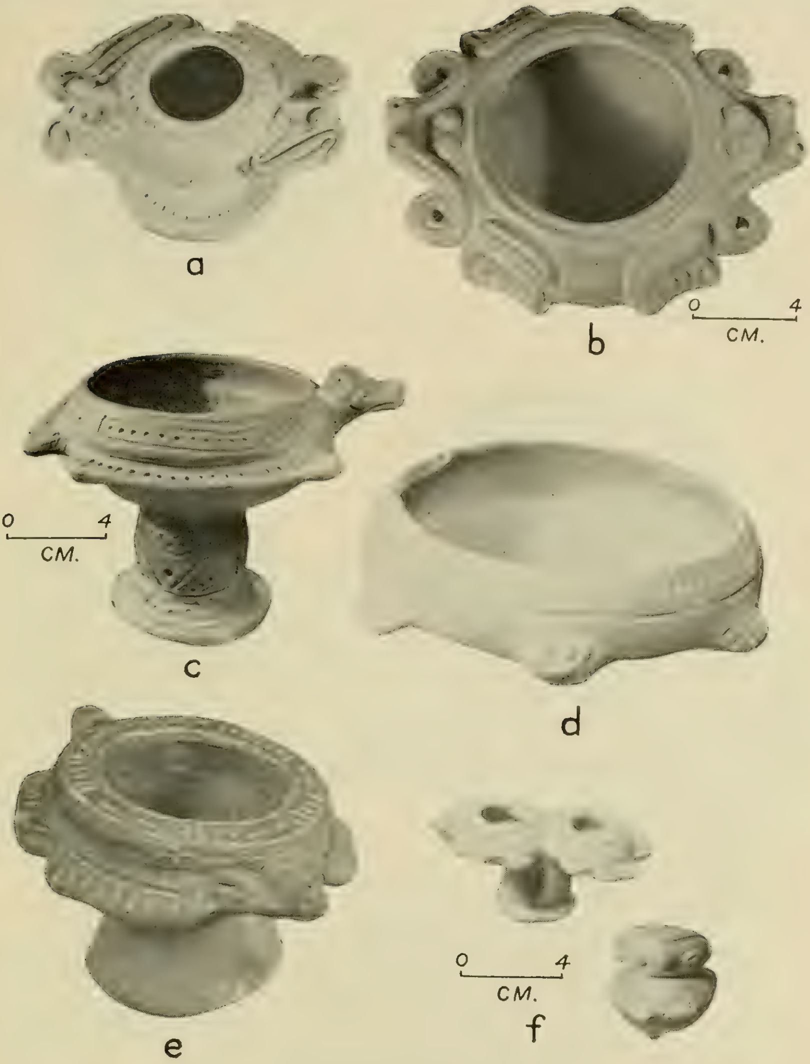
Painted urn and panel from incised monkey urn.



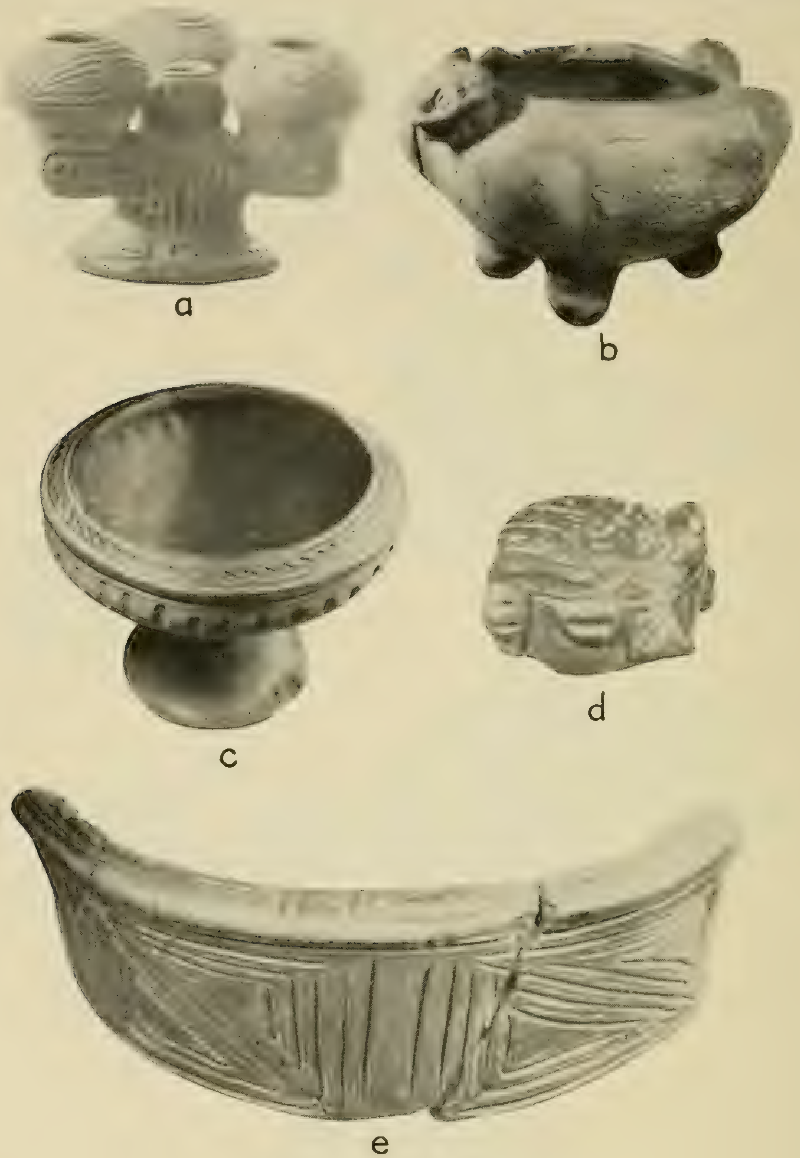
Votive ware double turtle-monkey effigy.



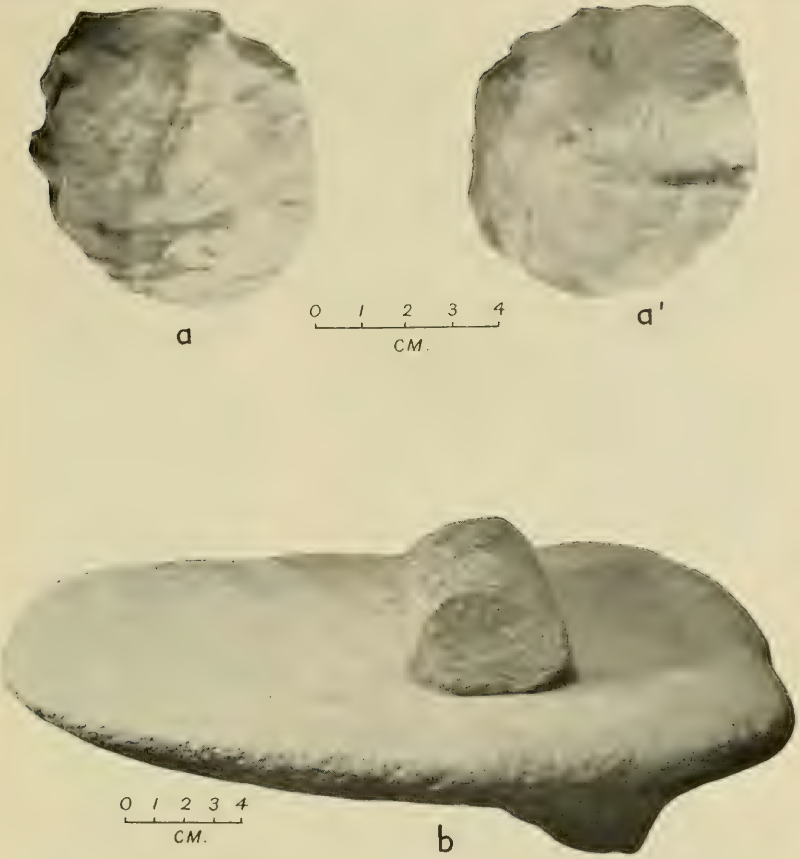
Votive ware double bird effigy.


a
b
0 4
CM.
c
0 4
CM.
d
e
0 4
CM.
f

Miscellaneous votive ware.



Miscellaneous votive ware.


a
0 1 2 3 4
CM.
a'
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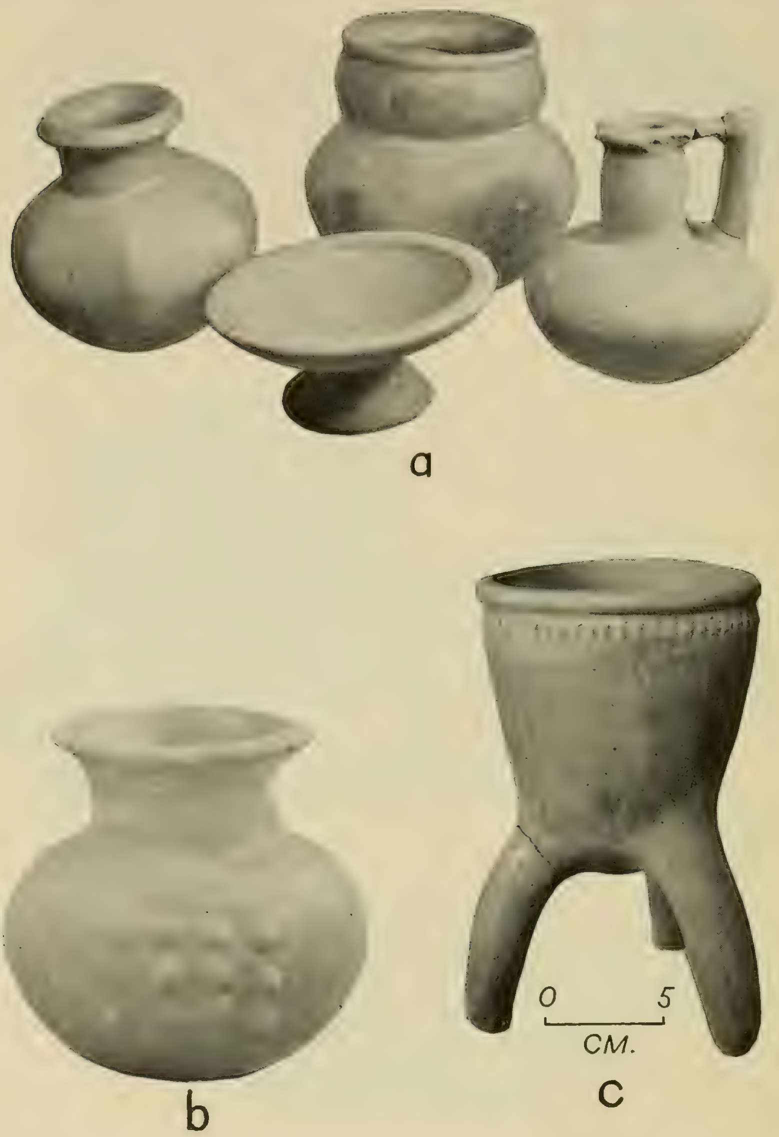
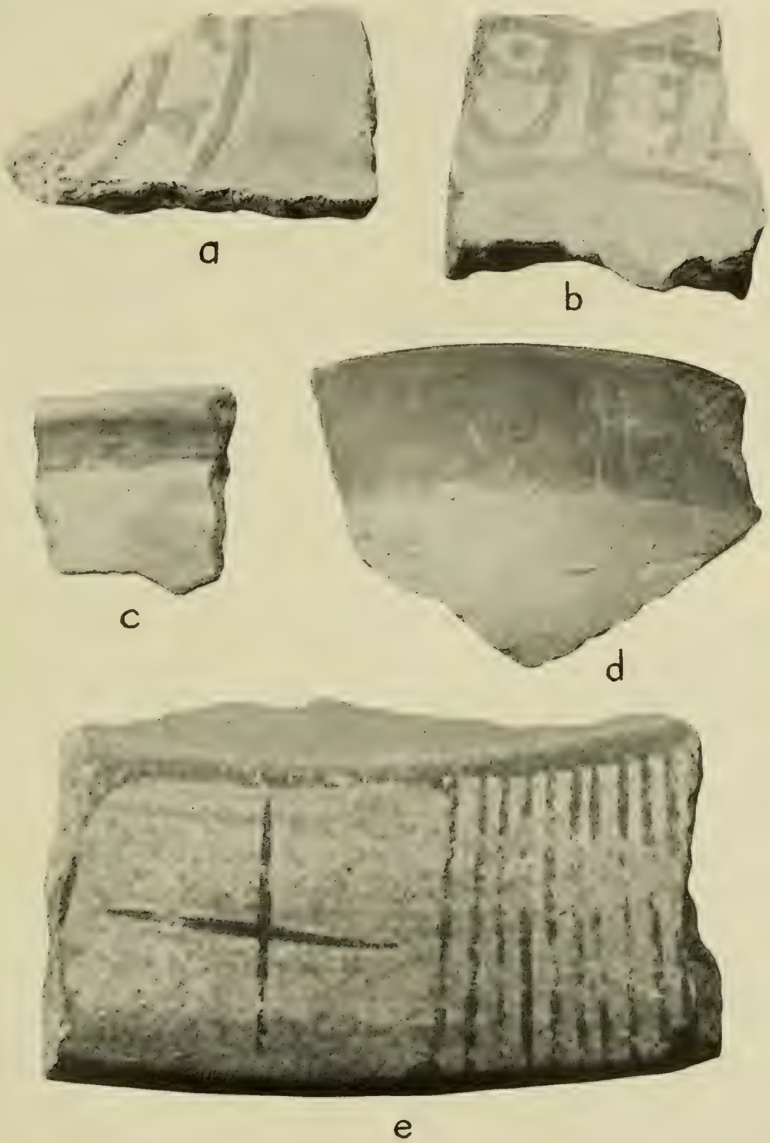
b

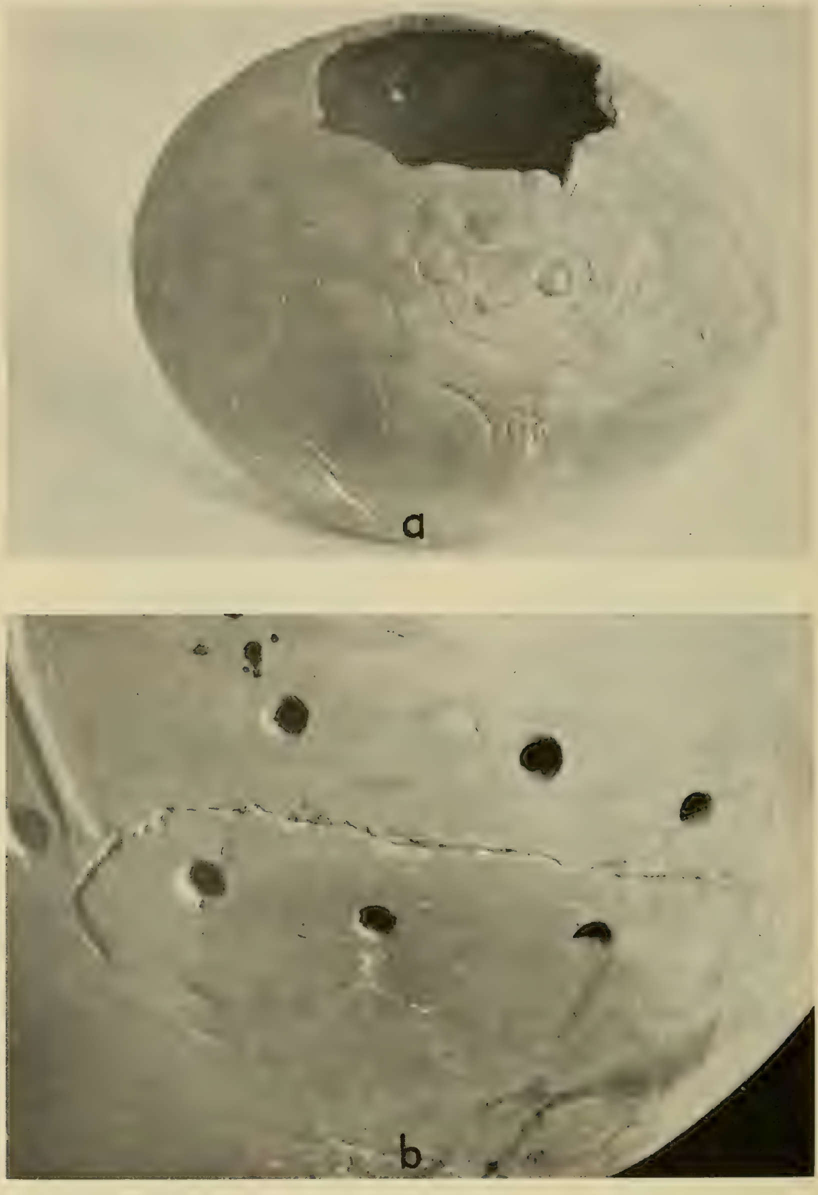
Stone artifacts.



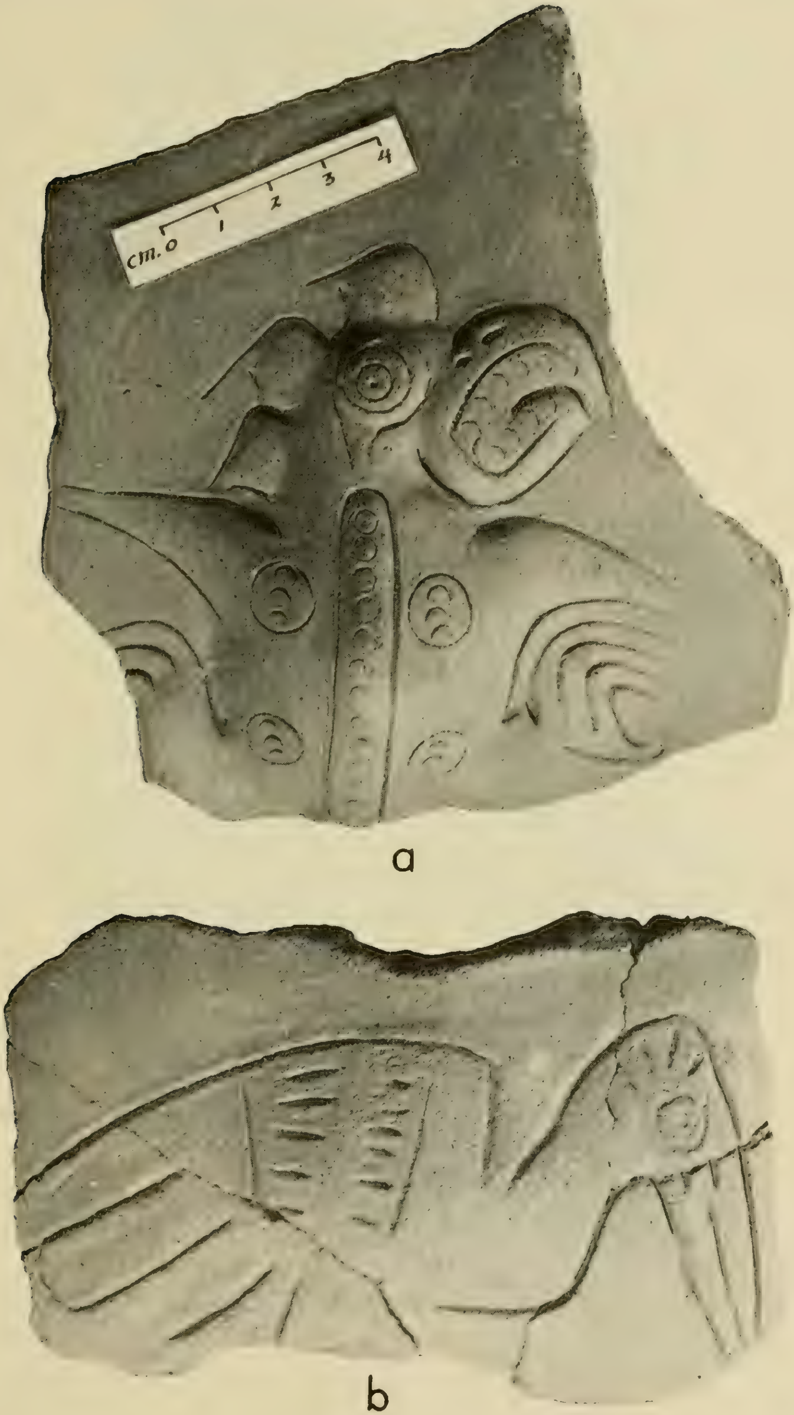
Red ware vessels.



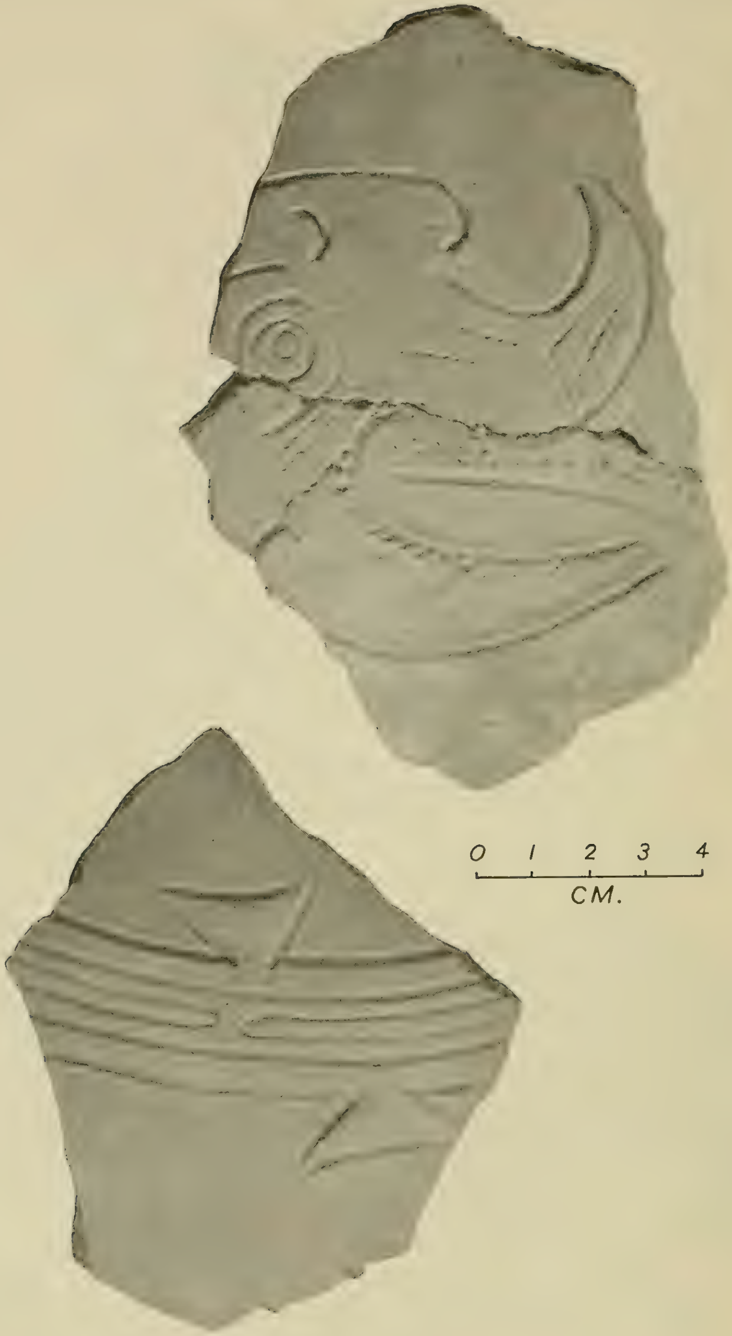
Painted wares.



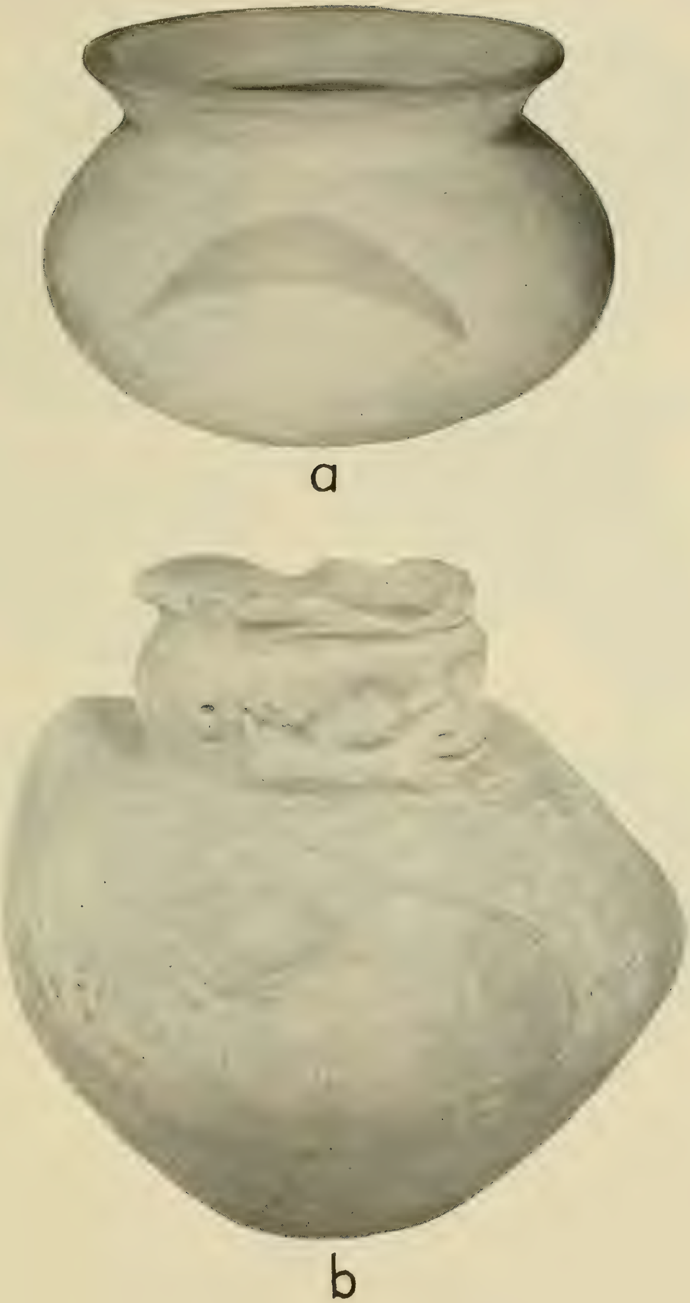
Lizard effigy vessel.



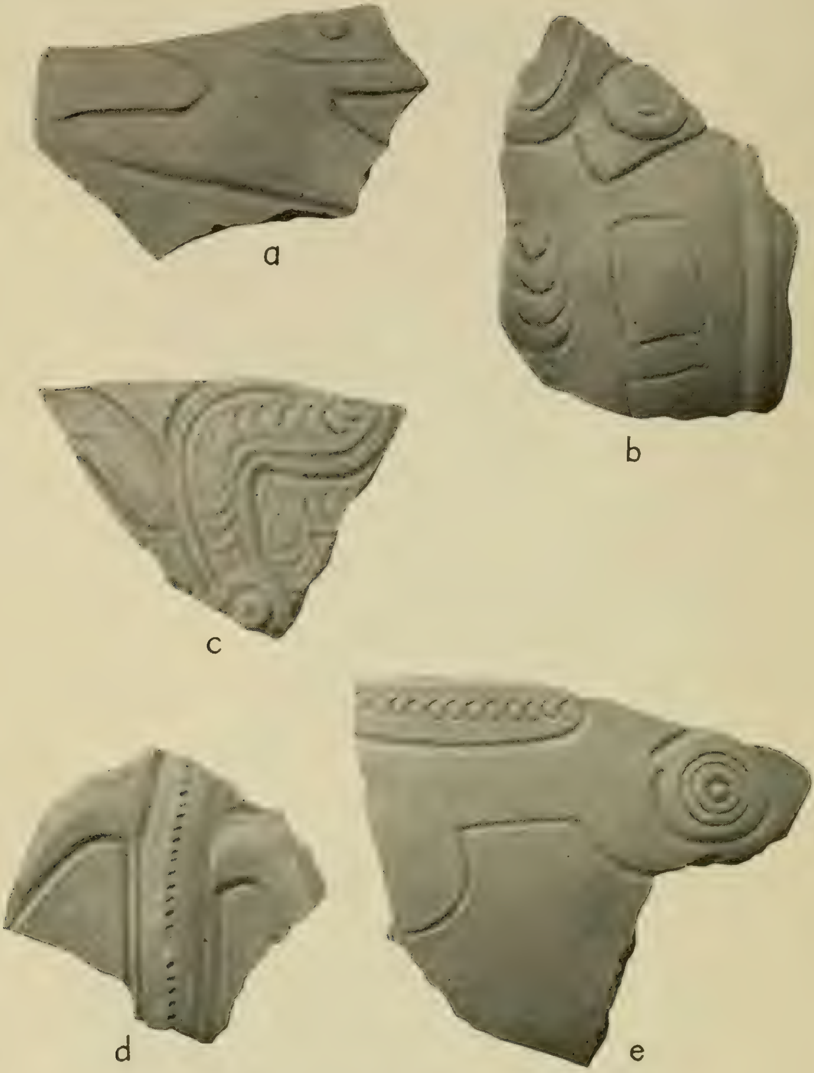
Incised relief brown ware.



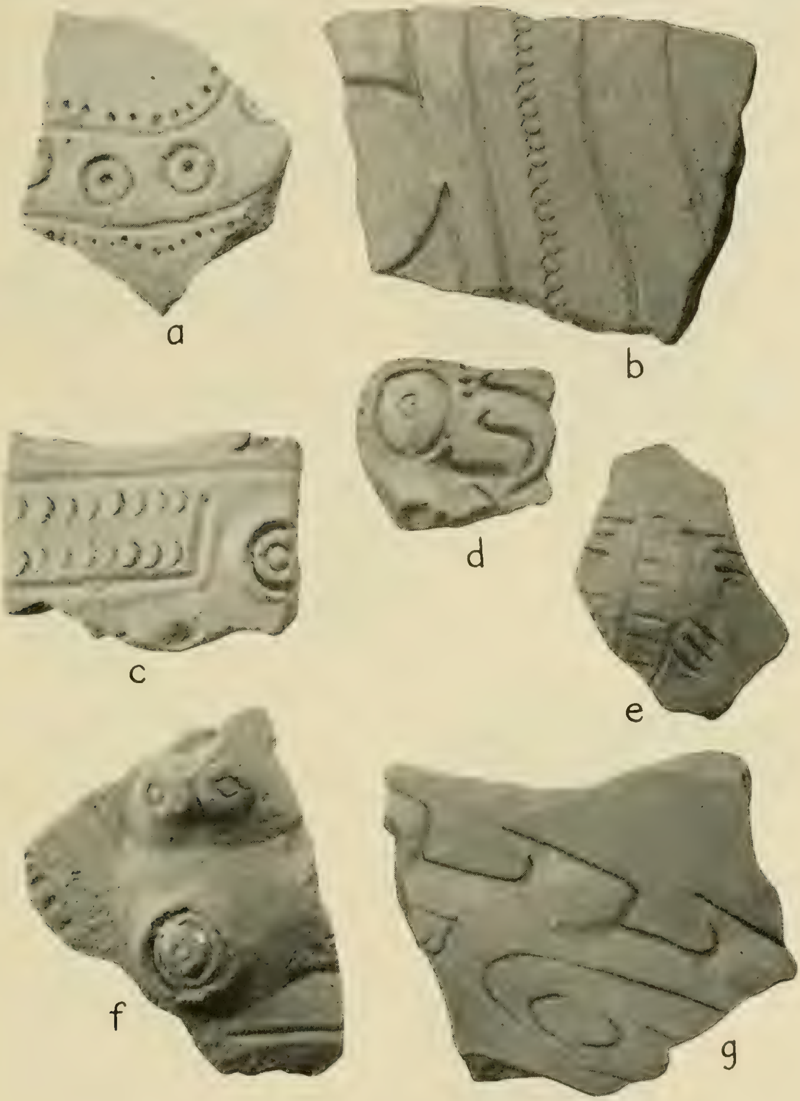
Incised relief brown ware.



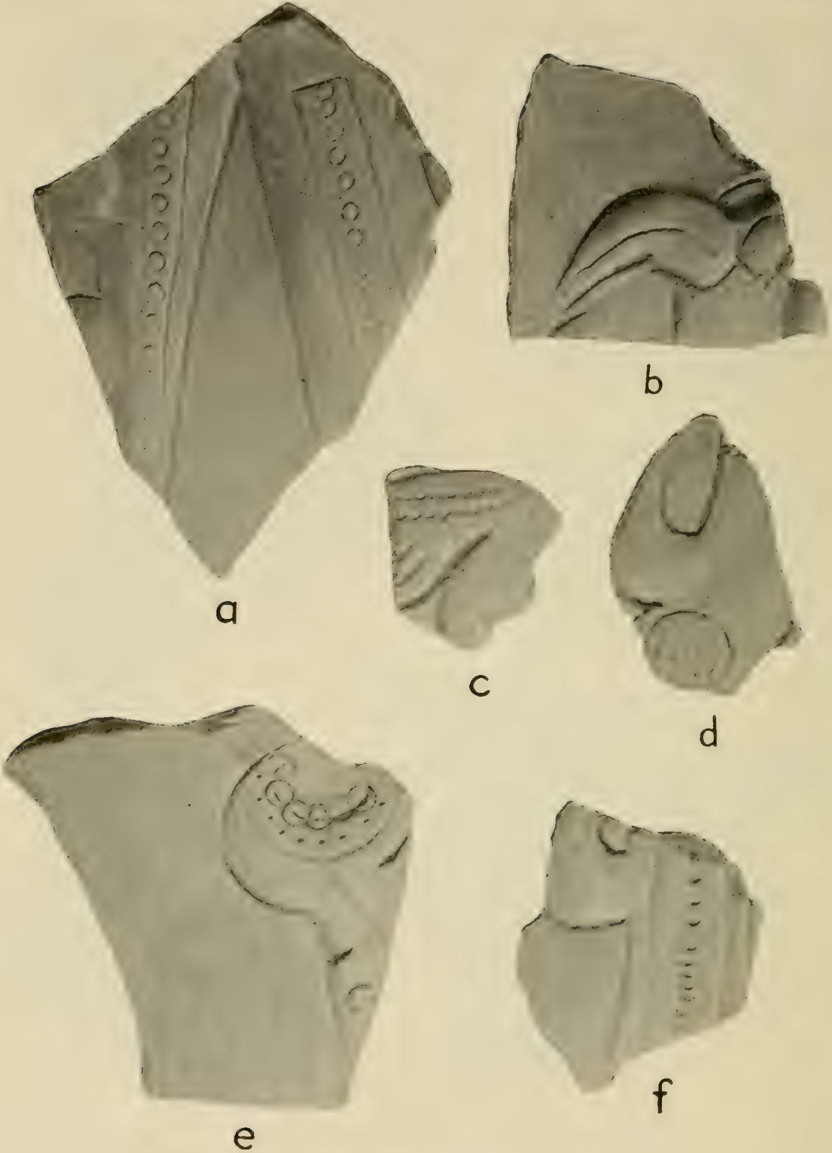
Coclé-type red line ware and humpback effigy jar.



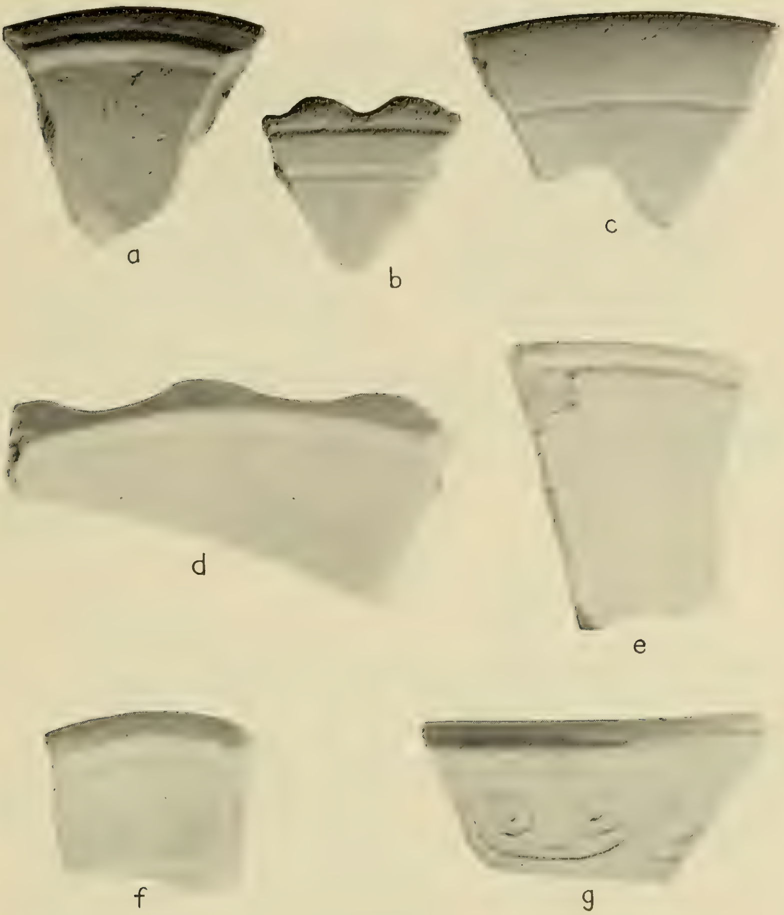
Incised relief brown ware.



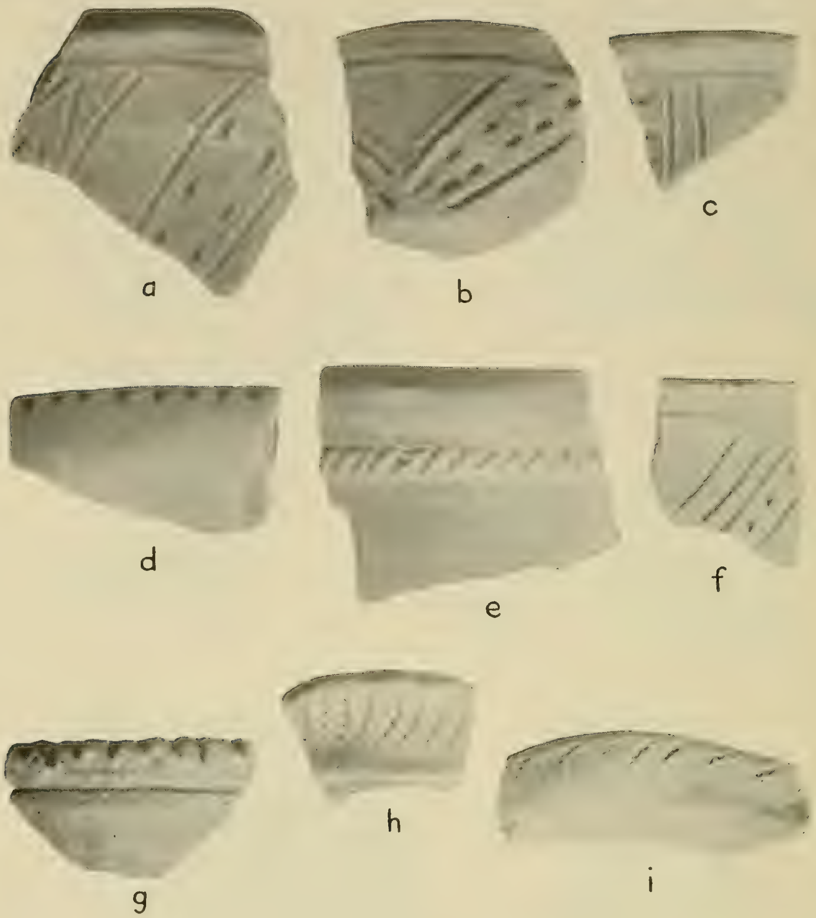
Incised relief brown ware.



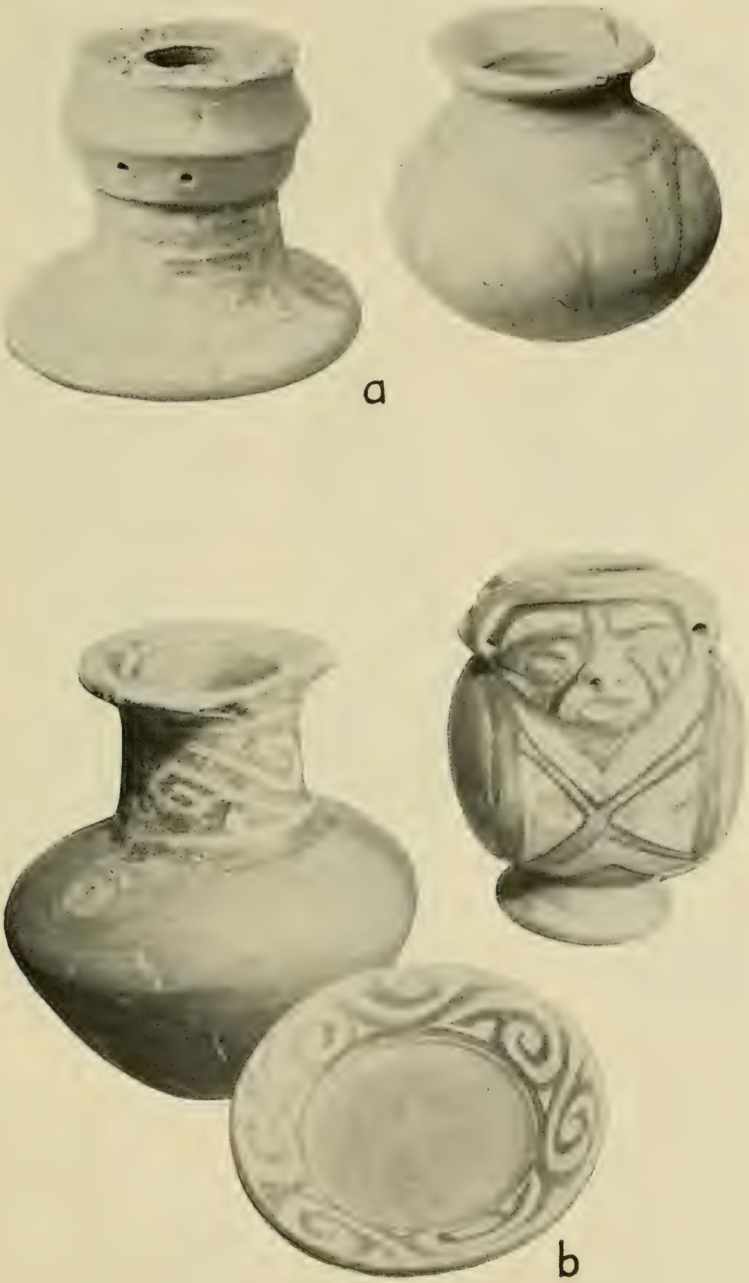
Incised relief brown ware.



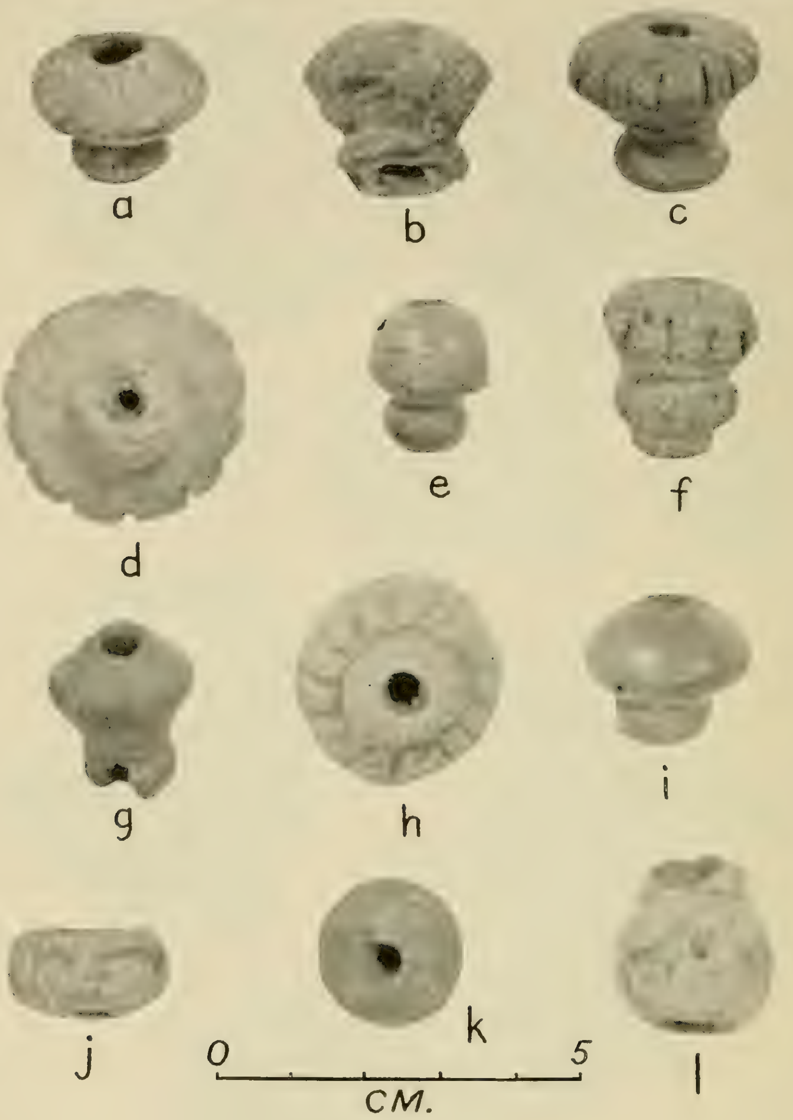
Rim sherds.



Rim sherds.



Miscellaneous polychrome and paneled red ware.


a
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h
i
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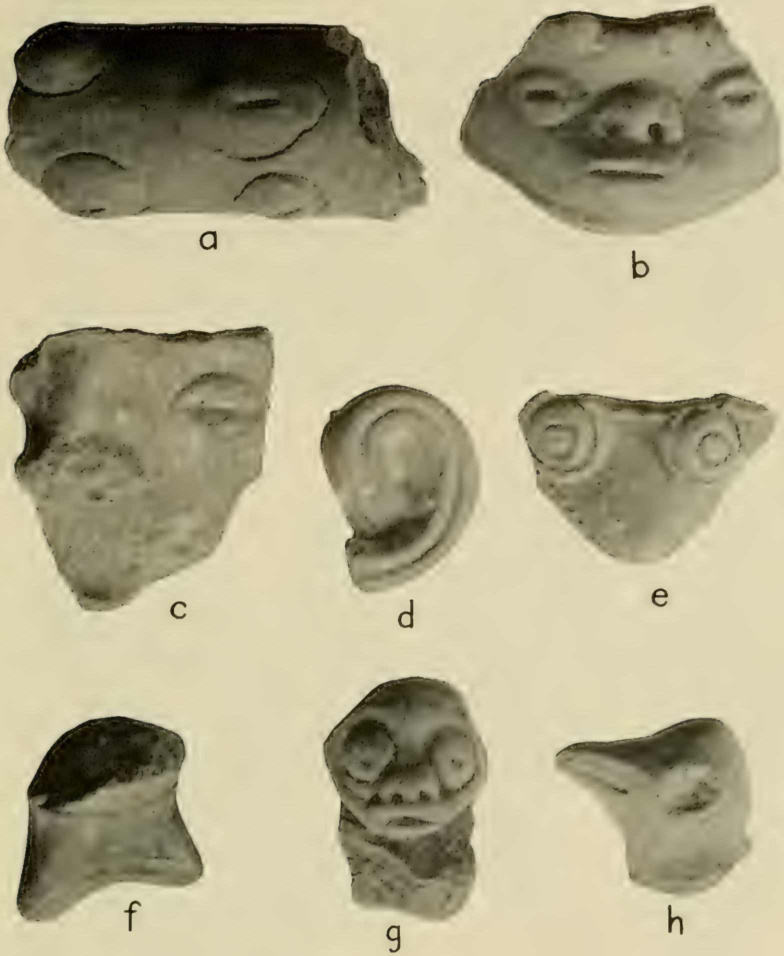
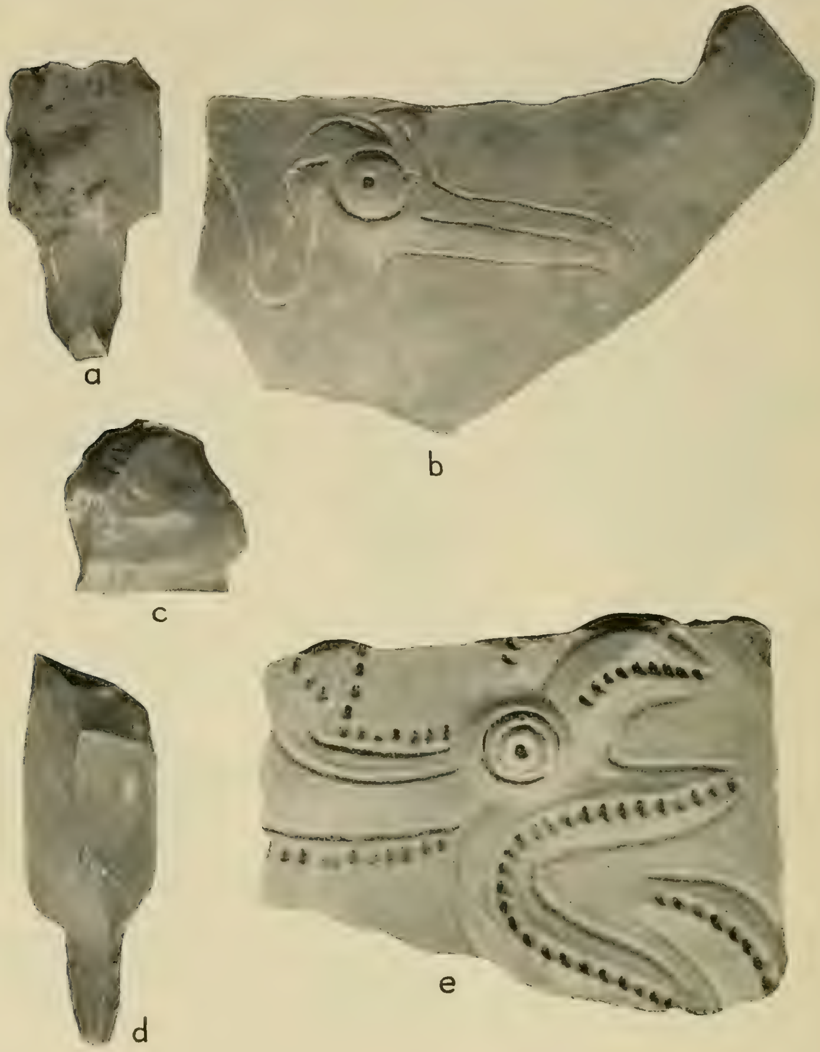
5
CM.

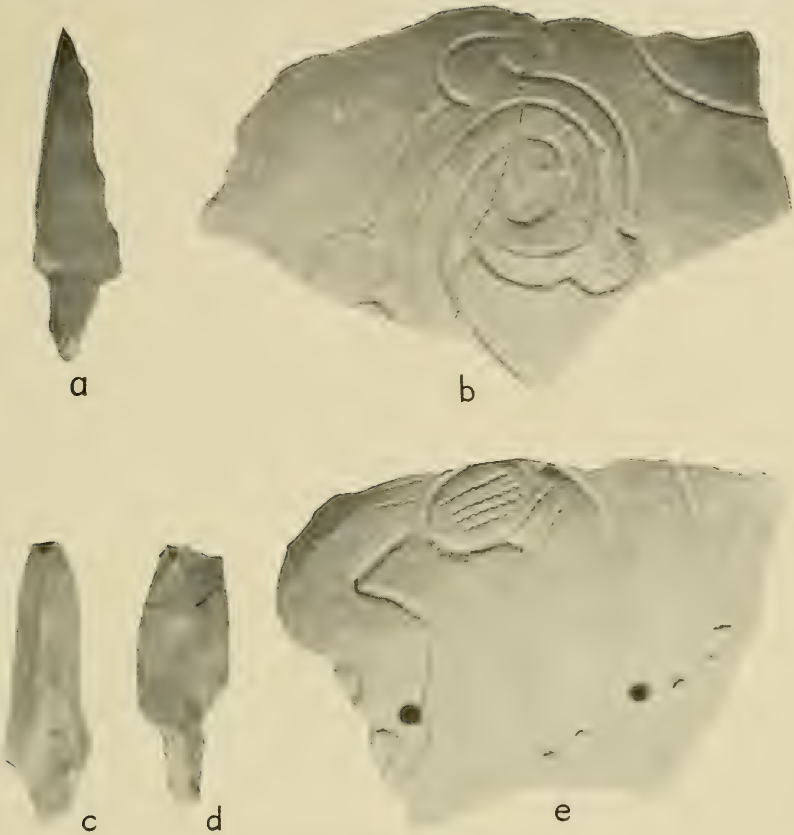
Spindle whorls.



Miscellaneous ceramic objects.



Artifacts from Venado Beach site.



Artifacts from Madden Lake site.

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Bulletin 191

## Anthropological Papers, No. 69

# THE LANGUAGE OF SANTA ANA PUEBLO

By IRVINE DAVIS

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# PREFACE

Data for this monograph were collected at intervals from 1954 through 1961 under the auspices of the Summer Institute of Linguistics. Much of the phonological material first appeared in my master's thesis and the grammatical material in my doctor's dissertation, both prepared at the University of New Mexico (1958 and 1960) under the supervision of Stanley S. Newman. Sincere thanks are due the latter for his understanding guidance and for the many hours of consultation spared from his busy schedule.

Many features of the language as recorded in this paper are shared with the other Keresan dialects, among which Santa Ana is rather centrally located both geographically and linguistically. While much remains to be done in adequately describing Keresan linguistic structure, it is hoped that this analysis will be found worthy of a place among the contributions to our knowledge of a heretofore little-known language. The analysis almost can be said to be that of an idiolect rather than a dialect. It is based largely on data obtained from one informant, a middle-aged man whose mother tongue is that of the Santa Ana Pueblo. I am deeply indebted to him for the endless hours which he spent in patiently supplying the material without which this work would have been impossible.

# THE LANGUAGE OF SANTA ANA PUEBLO

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By Irvine Davis

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## PHONOLOGY

### SYLLABLE STRUCTURE

Santa Ana Keresan utterances normally may be segmented exhaustively into recurrent structural units, or syllables, of the shape CV. The syllable margin, C, is composed of a simple consonant or a phonetically complex consonantal segment. The nucleus, V, consists of a vowel or vocalic sequence, with or without terminal glottal closure. A few loanwords and a word of possible onomatopoetic origin contain syllables which are closed by a nasal:

| | |
|---|---|
| nárán | *orange* (Spanish *naranja*) |
| ˀúyáumbúmcɪ | *drum* |

Syllables closed by consonants other than a glottal stop, however, are considered as an aberrant pattern.

Excluding sounds introduced by loanwords, there are 48 contrastive syllable margins:[1]

| | | | | |
|---|---|---|---|---|
| b | d | | d$^y$ | g |
| p | t | | č | k |
| ṗ | ṫ | | č̇ | k̇ |
| sb | sd | | sd$^y$ | sg |
| sp | st | | sč | sk |
| sṗ | sṫ | | sč̇ | sk̇ |
| | z | ẓ | | |
| | c | c̣ | | |
| | ċ | ċ̣ | | |
| | s | ṣ | š | |
| | ṡ | ṩ | ṧ | |
| m | n | | | |
| ṁ | ṅ | | | |
| | r | | | |
| | ṙ | | | |
| w | | | y | h ? |
| ẇ | | | ẏ | |

---

[1] The symbols herein used conform to the orthography developed by Wick R. Miller (1959 a, 1959 b, and 1960).

The stops include a voiceless unaspirated series, b, d, and g; a voiceless aspirated series, p, t, and k; and a glottalized series, ṗ, ṫ, and k̇, at bilabial, alveolar, and velar points of articulation:

| | |
|---|---|
| bî·ṣᴜ | *bee* |
| pî·ṫᴀ | *step on it* |
| ṗî·ṫᴀ | *let him step on it* |
| dí kᴜᴘᴀᴡᴀ | *maybe he chopped* |
| tí kᴜpawaṅᴇ | *maybe we chopped* |
| ṫí kᴜᴘᴀᴡᴀ | *maybe I chopped* |
| gâ·ṁᴀ | *his house* |
| kâ·ni | *let me walk* |
| k̇â·ni | *he walked* |

The alveopalatals, dʸ, č, and č̇, require special comment. These are grouped with the stops for the sake of symmetry and because there is evidence for their historic development from a set of stops parallel to the bilabial, alveolar, and velar sets. The voiceless alveopalatal stop, dʸ, is unaspirated preceding a voiced vowel and aspirated preceding a voiceless vowel:

| | | | |
|---|---|---|---|
| ċídʸa | *I caught him* | sí·dʸᴀ | *squirrel* |

The voiceless alveopalatal affricates, č and č̇, are aspirated and glottalized respectively:

| | | | |
|---|---|---|---|
| čúgúyᴀ | *maybe he sat* | č̇úgúyᴀ | *sit* |

The Keresan dialects at the present are in various stages of transition to a structure which includes both a set of alveopalatal stops and a set of affricates at the same point of articulation. Acoma, for instance, has a few occurrences of glottalized alveopalatal stops which contrast with the unglottalized phoneme. It also has unaspirated alveopalatal affricates occurring in loanwords. The Santa Ana dialect has unaspirated affricates in loanwords but has not developed aspirated or glottalized alveopalatal stops as distinct phonemes.

Each of the above stops and affricates may occur in a sibilant cluster:

| | | | |
|---|---|---|---|
| sbíga | *woodpecker* | sčâuˀᴜ | *a crowd* |
| sdú·cɪ | *bowl-shaped* | skú·ná | *blackbird* |
| sdʸìudiˀ | *I (didn't) give it to him* | ẇìsṗɪ | *cigarette* |
| sgâ·ẇašɪ | *rat* | sṫə́·cɪ | *straight* |
| spérá·ná | *plate* | sč̇ísᴀ | *six* |
| stú·ná | *autumn* | sk̇àšɪ | *fish* |

There are voiceless unaspirated affricates, z and ẓ; voiceless aspirated affricates, c and c̣; and voiceless glottalized affricates, ċ and ċ̣, at alveolar and retroflexed points of articulation:

| | | | |
|---|---|---|---|
| zàdʸa | *desert* | ẓàkᴜ | *let him bite you* |
| càcɪ | *breath* | c̣àkᴜ | *maybe you bit him* |
| ċàkᴜ | *it bit him* | ċ̣àkᴜ | *maybe I bit you* |

There is a series of voiceless sibilants, s, ṣ and š, and of glottalized sibilants, ṡ, ṩ and ṧ at alveolar, retroflexed and alveopalatal points of articulation respectively:

| | | | |
|---|---|---|---|
| sa | *back* | ṡa | *mine* |
| ṣa | *scattered* | ṩa | *you are mine* |
| šàsk̇ᴀ | *roadrunner* | há·ṧuwiṁɪ | *shoe* |

The plain sonorants, m, n, r, w, and y, and the glottalized sonorants, ṁ, ṅ, ṙ, ẇ, and ẏ, are normally voiced but occur as voiceless variants when flanked by voiceless vowels:

| | | | |
|---|---|---|---|
| kúčᴀʏᴀᴡᴀ | *he is angry* | sgúhɪᴍᴀ | *I believe* |

In their occurrence between a voiced and a voiceless vowel they may be voiceless, partly voiced, or fully voiced, depending on factors such as the rate of speech:

| | | | | | |
|---|---|---|---|---|---|
| díyᴀ | *dog* | cínᴀ | *turkey* | gâ·ṁᴀ | *his house* |

Unlike other glottalized consonants, which are produced with the glottis closed, glottalized sonorants are initiated with a momentary glottal closure and release.

The nasals are produced at bilabial and at alveolar or alveopalatal points of articulation. The alveopalatal variant occurs preceding a front vowel, while the alveolar form occurs elsewhere:

| | | | |
|---|---|---|---|
| másâ·ni | *leaf* | ṁá·ní | *word* |
| nətɪ | *prairie dog* | ṅə | *down* |
| nèkᴜ | *will bite* | ṅí·zúᴡᴀ | *will pay* |

The phonemes r and ṙ are alveolar flaps, while w, ẇ, y and ẏ are nonsyllabic vocoids:

| | | | |
|---|---|---|---|
| ráwá· | *good* | sč̇íṙá | *crow* |
| wá·wá | *medicine* | ẇâ·yuṣᴀ | *duck* |
| yáʔái | *sand* | ẏâuni | *stone* |

The "glottal fricative," h, and the glottal stop, ʔ, complete the inventory of native consonants:

| | | | |
|---|---|---|---|
| há·bí | *feather* | ʔáʔá·ṫáwɪ | *key* |

Sounds introduced through loanwords include the voiceless unaspirated alveopalatal affricate, ž; the voiced stops, ʙ, ᴅ and ɢ; and the voiced alveolar lateral, l:

| | |
|---|---|
| ží·ri | *chili* |
| ʙendá·na | *window* (Spanish *ventana*) |
| ʔamá·ᴅu | *pillow* (Spanish *almohada*) |
| ɢayê·tᴀ | *biscuit* (Spanish *galleta*) |
| lé·ʙa | *coat* (Spanish *leva*) |

Phonemic sequences introduced by loanwords include stops plus r or l and nasals plus homorganic stops:

| | |
|---|---|
| blâ·ꜱᴀ | *city* (Spanish *plaza*) |
| sandiyâ·kᴜ | *St. James* (Spanish *Santiago*) |

Vowels are produced at five contrastive tongue positions and may be either voiced or voiceless:

High front unrounded, i and ɪ.
Mid to low front, e and ᴇ.
Low central, a and ᴀ.
High central to back unrounded, ə and ⱻ.
Mid to high back rounded, u and ᴜ.

Examples of the five voiced vowels in initial syllables are as follows:

| | | | |
|---|---|---|---|
| si | *again* | séwi | *my neck* |
| sa | *back* | sə́nᴀ | *middle* |
| súwá | *yesterday* | | |

Voiced and voiceless vowels are in nearly complementary distribution. Relevant conditioning factors include the position of the vowel within larger phonological units, the pattern of suprasegmental features, and the nature of contiguous consonants. Word-final vowels, for instance, are normally voiceless if they are short, unaccented, and not preceded by an unglottalized sonorant which is in turn preceded by a long accented or by an unaccented vowel:

| | | | |
|---|---|---|---|
| cínᴀ | *turkey* | ċâ·pɪ | *fly* |
| tâ·ṁᴀ | *five* | gùpɪ | *forehead* |

Compare:

| | | | |
|---|---|---|---|
| šína· | *louse* | gášé | *white* |
| dʸâ·na | *four* | gánami | *beans* |

There are, however, a number of words containing voiced vowels in environments in which voiceless vowels normally occur. It is because of these occurrences that phonemic significance must be ascribed to voicing versus voicelessness in vowels:

| | | | |
|---|---|---|---|
| gùdi | *give it to me* | ṁína | *salt* |
| sbíga | *woodpecker* | kásdi | *his foot* |

Examples of the five voiceless vowels in final and in medial positions are as follows:

| | | | |
|---|---|---|---|
| nətɪ | *prairie dog* | k̇áucɪgái | *maybe* |
| su̇pᴇ | *I ate* | zíyùcᴇyᴀ | *he carried it* |
| ˀúwàkᴀ | *baby* | ẏáẇᴀstí | *stick* |
| kú·kⱻ | *winter* | həçⱻsk̇áwa | *willow* |
| yúk̇ᴜ | *away* | zíkᴜsdʸáwi | *bridge* |

Vowels occur singly or in clusters of two. The following vowel sequences have been recorded:

| | |
|---|---|
| iu as in síuni | *I know him* |
| ei as in dʸèicɪ | *piñon pine* |
| eu as in ċêuˀᴜ | *I gave it to him* |
| ai as in sai | *all* |
| ᴀɪ as in ċìkᴀɪ | *he lay down* |
| au as in hau | *who* |
| ui as in ş̌úisɪ | *bluejay* |
| ua occurring in the data only in ṗáguara | *salamander* |

The nucleus of a syllable consists of one of the single vowels or vowel clusters, with or without terminal glottal closure. The nucleus is also the domain of certain suprasegmental features yet to be described. Terminal glottal closure is written as a segmental feature only in unstressed syllables:

náza' *will say*  sí·ba'tʊ *I slept*

Contrastive suprasegmental features include accent and vowel length. There are four kinds of accent: level, indicated by an acute accent; falling, indicated by a circumflex accent; breathy, indicated by a grave accent; and glottal, indicated by an apostrophe over the vowel. Unaccented vowels are not marked. Level accented vowels are stressed and normally have a high level pitch:

k̓ácɪ *ten*  záwini *old*

There is a tendency for a slight upglide in pitch on long vowels or vowel clusters with level accent:

kə́·cɪ *antelope*  háubá· *everyone*

The pitch on level accented vowels is conditioned to some degree by the position in the word and by the nature of the preceding consonant. A vowel preceded by a plain sonorant, for instance, often has a higher relative pitch than a vowel in a comparable position but preceded by one of the other consonants. The two vowels of čámá *tomorrow* normally have approximately the same pitch, while there is a pronounced drop in pitch on the second syllable of gášé *white*.

Falling accent occurs only on long vowels or vowel clusters and is characterized by a downglide in pitch together with diminishing stress:

dâ·ni *pumpkin*  y̓âuni *stone*  másâ·ni *leaf*

Vowels or vowel clusters with breathy accent begin with voicing and terminate in voicelessness. The initial voiced segment is short and stressed, and has a relatively high pitch:

càcɪ *breath*  m̓àidʸana *seven*

Single short accented vowels or accented vowel clusters which are terminated by glottal closure are written with the glottal accent:

ga̓kʊ *he is located*  sa̓ubə́nacʌ *I sewed*

A voiceless echo vowel may follow the release of the glottal stop, although this is not a consistent feature. The reasons for treating glottal accent as a phenomenon distinct from the glottal closure in unstressed syllables derive largely from comparative considerations.

Vowel length always occurs with falling accented vowels and may occur with level accented or with unaccented vowels:

pâ·ni *bag*  čí·ná *river*  háwe· *snow*

A slight downglide in pitch tends to occur on final long unaccented vowels.

Potential combinations of the 48 syllable margins with the various types of nuclei number several thousand. Only a fraction of these, however, actually occur in the data. The lack of some combinations may be attributed to incomplete data or to the extremely low probability of certain rare types of nuclei following the less common margins. The absence of other kinds of combinations is apparently a relevant feature of the phonological structure. The more important of these are as follows:

1. A bilabial semivowel, w or ẇ, is never followed by the back rounded vowel, u.
2. An alveopalatal semivowel, y or ẏ, is never followed by the high front vowel, i.
3. A retroflexed consonant, c̣, ċ̣, ẓ, ẓ̇, ṣ, or ṩ, is never followed by a front vowel, i or e.
4. An alveopalatal affricate or fricative, č, č̇, š, or ṧ, is never followed by the high central unrounded vowel, ə.
5. The voiceless unaspirated stops and affricates, b, d, g, z, and ẓ are never followed by a voiceless vowel.

## WORD STRUCTURE

The definition of a word is treated in a later section. Here the general phonological structure of words is described.

Words may be composed of a single syllable, za *no*, but are more often dissyllabic or polysyllabic. Words of up to nine syllables have been recorded: sgú·ẇàkᴀčaniguyase·tᴇ *we are* (*not*) *looking at them.*

With few exceptions, each of the 48 margins may occur in any syllable of the word. The margins sč, ċ̣ and ṡ show evidence of special development and occur only word-initially as verb prefixes. Although h is very common initially, its extremely low frequency of occurrence in medial position is significant. In the present data it occurs in this position only in gúháyᴀ *bear* and in verbs based on the cores, -hɪmᴀ *to believe* and -hé?é·zánɪ *to permit.*

Each of the single voiced vowels may occur in any syllable of the word, while the voiceless vowels may occur in any except the initial syllable. Of the vowel clusters, iu is found almost exclusively in the initial syllable of verbs where it is divided by a morpheme boundary. The distribution of eu is similar, although the particle ?eu is of very frequent occurrence. The sequences ai, au, and ui are found in all positions in the word, while the remaining clusters occur so infrequently that generalizations are impossible.

Level accented syllables, both short and long, are found in all positions in the word. The glottal accent may occur on any syllable, but only rarely on other than the first. Falling and breathy accents may occur on an initial or medial, but never a final, syllable. Although any syllable of the word may be unaccented, the initial syllable is accented in an overwhelming majority of the words.

Word patterns based on the number of syllables and the arrangement of suprasegmental features are extremely varied. The more commonly occurring patterns found among dissyllabic and trisyllabic words are indicated below:

| | | |
|---|---|---|
| CV́CV | núya | *night* |
| CV́CV́ | gášé | *white* |
| CV́·CV | ṫə́·cɪ | *straight* |
| CV́·CV́ | sbí·ná | *chicken* |
| CV̂·CV | dâ·ni | *pumpkin* |
| CV̇CV | dėkᴜ | *they went* |
| CV̀CV | cècɪ | *wall* |
| CV́CVCV | sínani | *flesh* |
| CV́CV́CV | ˀáşánɪ | *wheat* |
| CV́CV́CV́ | dámáyá | *Santa Ana Pueblo* |
| CV́CV́·CV́ | sk̇úrú·ná | *peas* |
| CV́CV̂·CV | híyâ·ni | *road* |
| CV́CV̀CV | ˀúwàkᴀ | *baby* |
| CV́·CVCV | nú·bəda | *alone* |
| CV́·CV́CV | ẏá·čínɪ | *corn* |
| CV́·CV́·CV | ˀú·mú·cɪ | *gun* |
| CV́·CV́CV́ | dí·skámá | *cornhusk* |
| CV̂·CVCV | ẇâ·yuşᴀ | *duck* |
| CV̀CVCV | ṁàidʸana | *seven* |

## RHYTHM GROUPS

A rhythm group is a segment of speech which is marked off by pauses and/or which is characterized by the presence of one syllable of extra intensive stress. This unit may consist of an isolated monosyllabic word, such as ẏu· *I don't know,* but ordinarily embraces a sequence of many syllables. In normal speech (i.e., in which there are no hesitation pauses) the boundaries of a rhythm group fall at word boundaries, although every word boundary is not a rhythm group boundary. The number of words included in a rhythm group depends on the grammatical content of the particular utterance and on the style of speech. A free flowing conversational style is characterized by rhythm groups that include relatively long segments of speech. Such extensive groups are consequently few in number in relation to those in a comparable utterance delivered in a more vigorous or in a more hesitating style of speech. In rapid speech the pauses tend to be few in number and the onset of a new rhythm group may be signaled only by a rise in intensity and pitch on an accented syllable. This syllable is most often the initial syllable of the rhythm group.

Rhythm groups are normally characterized by a gradual falling off of the general pitch level and intensity following the syllable which receives the greatest stress. The extent of this falling off depends on the length of the rhythm group. Toward the end of a very long rhythm group the speech may fade into a whisper in which normally voiced phonemes are unvoiced.

In contrast to normal rhythm groups, an utterance may sometimes show no diminishing of pitch on successive accented syllables. This is true of certain types of questions or other utterances for which a response is anticipated:

| | |
|---|---|
| mə· háẇé· ṣu ˀúmə́mə́ | *Listen here, grandchild . . .* |

Hortatory utterances often are characterized by a gradual diminishing of the pitch level as in a normal rhythm group until the final syllable is reached. The final syllable is then given an extra emphasis that involves the rearticulation of a normally voiced vowel or the voicing of a normally voiceless vowel together with added intensity and pitch:

| | |
|---|---|
| háẇé· ˀí·maˀá | *Come here!* |
| dísí ba č̇úyû·k̇amí | *Wait for me here!* |

Compare the same utterances without the hortatory emphasis:

háẇé· ˀí·ma
dísí ba č̇úyû·k̇ᴀᴍɪ

## MORPHOPHONEMICS

The morphophonemic rules outlined below consist of a series of statements which simplify the morphological description to follow. Included for consideration are a number of changes in stems and in affixual morphemes which are somewhat regular and which can be explained on the basis of the phonological environment. Two processes, vowel reduction and the voicing or unvoicing of vowels, are rather extensive in their operation and are described in the following two sections respectively. "Miscellaneous Processes" deals with a number of phenomena of more restricted occurrence.

Excluded for consideration here are numerous cases of phonologically similar forms (e.g., the second person subject markers ṣ- and š-) which at an earlier stage in the language may have been in mutually exclusive distribution in terms of their phonological environment. In a synchronic description of the present Santa Ana dialect, however, they are most conveniently treated as allomorphs, the distribution of which is defined morphologically rather than phonologically.

### VOWEL REDUCTION

Changes in the vowel or vowels immediately following the pronominal affix in verbs may often be explained in terms of vowel reduction. This involves a fusing of the thematic adjunct with a preceding voice prefix or with the vowel of a preceding pronominal affix. Vowel reduction normally follows the patterns outlined below.

1. Two contiguous identical vowels reduce to a single vowel of the same quality. This reduction takes place, for instance, when a pronominal prefix of the shape CV- precedes a stem having an initial vowel of the same quality as that of the prefix:

| | |
|---|---|
| ṩàkᴜ (ṩa- + -àkᴜ) | *I bit you* |

Compare:

| | |
|---|---|
| ṩáuni (ṩa- + -úni) | *I know you* |

Apparent shifts in accent in the above and other examples arise from orthographic conventions. Accent is indicated only on the first vowel of a cluster, although it is the entire cluster that is accented. This, together with the fact that accent is not indicated on prefixes of the shape CV- (the prefix vowel assumes the accent of the following thematic adjunct), results in a shift of the written accent to the prefix vowel. Vowel reduction of the above type also occurs when the reflexive prefix -a- or the passive prefix -áˀa- precedes a verb stem beginning with -a-:

| | |
|---|---|
| ṩàkᴜ (ṩ- + -a- + -àkᴜ) | *you bit yoursel* |
| šáˀàguṅᴇ (š- + -áˀa- + -àguṅᴇ) | *you were bitten* |

Compare:

| | |
|---|---|
| ṩàukᴀčᴀ (ṩ- + -a- + -ùkᴀčᴀ) | *you saw yourself* |
| šáˀàudiˀtᴀ (š- + -áˀa- + -ùdiˀtᴀ) | *it was given to you* |

2. No vowels or vowel clusters of more than two moras' length occur. A reduction from three to two moras of length takes place when a short and long vowel are juxtaposed:

| | |
|---|---|
| ċí·zúᴡᴀ (ċi- + -í·zúᴡᴀ) | *I paid him* |
| č̇úizúᴡᴀ (č̇u- + -í·zúᴡᴀ) | *you paid me* |

3. The vowel -u- followed immediately by -a- reduces to the single vowel -a-. This occurs when the pronominal prefix ends with -u- and the verb stem begins with -a-:

| | |
|---|---|
| č̇àkᴜ (č̇u- + -àkᴜ) | *you bit me* |
| k̇àkᴜ (k̇u- + -àkᴜ) | *bite me* |
| sk̇àkᴜ (sk̇u- + -àkᴜ) | *he bit me* |

Compare:

| | |
|---|---|
| č̇úizúᴡᴀ (č̇u- + -í·zúᴡᴀ) | *you paid me* |
| k̇úizúᴡᴀ (k̇u- + -í·zúᴡᴀ) | *pay me* |
| sk̇úizúᴡᴀ (sk̇u- + -í·zúᴡᴀ) | *he paid me* |

4. The vowel -i- immediately followed by -a- reduces to the single vowel –e–. This takes place when a pronominal prefix ending with –i– precedes a verb stem beginning with –a–:

| | |
|---|---|
| sèkᴜ (si- + -àkᴜ) | *I bit him* |
| tèkᴜ (ti- + -àkᴜ) | *maybe I bit him* |
| ṗèkᴜ (ṗi- + -àkᴜ) | *let him bite him* |

Compare:

| | |
|---|---|
| síuk̇àicᴀ (si- + -ú·k̇àicᴀ) | *I hit him* |
| tíuk̇àicᴀ (ti- + -ú·k̇àicᴀ) | *maybe I hit him* |
| ṗíuk̇àicᴀ (ṗi- + -ú·k̇àicᴀ) | *let him hit him* |

5. The vowel -i- immediately followed by -ə- reduces to the single vowel -i-. This takes place when certain stems beginning with -ə- are preceded by a prefix containing -i-:

| | |
|---|---|
| sìsk̇ᴀ (si- + -əsk̇ᴀ) | *I drank* |
| sí·ṫá (si- + -ə́·ṫá) | *I am full* |

Compare:

| | |
|---|---|
| gə̀sk̇ᴀ (g- + -ə̀sk̇ᴀ) | *he drank* |
| gə́·ṫá (g- + -ə́·ṫá) | *it is full* |

6. The vowel -a- followed immediately by -ə- reduces to the sequence -ai-. This change occurs in the first person hortative form of some verbs having stems which begin with -ə-:

| | |
|---|---|
| kàisk̇ᴀ (ka- + -ə̀sk̇ᴀ) | *let me drink* |

Compare:

| | |
|---|---|
| káibaˀtᴜ (ka- + -í·baˀtᴜ) | *let me sleep* |

7. The vowels -a- and -u- followed immediately by a short level accented -í- reduce to -á- and -ú- respectively:

| | |
|---|---|
| ṩásti (ṩa- + -ísṫi) | *I gave you a liquid* |
| dʸúsṫi (dʸu- + -ísṫi) | *you gave me a liquid* |

Compare:

| | |
|---|---|
| zísṫi (zi- + -ísṫi) | *he gave him a liquid* |

A vowel cluster results, however, if the -i- is characterized by any other type of accent.

| | |
|---|---|
| ṣáizúwᴀ (ṣa- + -í·zúwᴀ) | *I paid you* |
| č̇ûiṫᴀ (č̇u- + -î·ṫᴀ) | *you stepped on me* |
| č̇úiṩaçᴀ (č̇u- + -ìṩaç̣ᴀ) | *you named me* |

The patterns of vowel reduction outlined above avoid the following vowel sequences: -ua-, -ia-, -iə-, -aə- and double vowels. With the exception of a single recorded example of -ua-, these vowel clusters do not occur in Santa Ana Keresan. Other nonoccurring sequences, -ie-, -ae-, -eə-, -ea-, -əe-, -əi-, -əa-, -əu-, -ue- and -uə-, involve vowels which are never brought into juxtaposition in morphological constructions.

In addition to the vowel reduction already described there are certain patterns of reduction which involve semivowels. A stem-initial -uw- (in which the -u- is short) reduces to -w- when preceded by a prefix of the shape CV-:

| | |
|---|---|
| zíwa·sa (zi- + -úwa·sa) | *he is sick* |

Compare:

gúẓúwa·sa (gə́ẓ- + -úwa·sa) *you are sick*

Under similar conditions -iy- reduces to -y-. This reduction, however, may be alternatively explained as an example of the pattern u + í > ú previously described.

sk̓úyanikᴜyᴀ (sk̓u- + -íyanikᴜyᴀ) *he told me*

Compare:

ċíyanikᴜyᴀ (ċi- + -íyanikᴜyᴀ) *I told him*

In stems of four or more syllables, an initial -uwi- (but not -uẇi- or -uwi·-) reduces to -ui- when preceded by a prefix of the shape C-:

gúišɪkᴜyᴀ (g- + -úwíšɪkᴜyᴀ) *he scolded him*

The reduction of -uw- to -w- as described above occurs in the same stem when the prefix is of the shape CV-:

síwíšɪkᴜyᴀ (si- + -úwíšɪkᴜyᴀ) *I scolded him*

Vowel reduction similar to the patterns already described sometimes operates across an intervening glottal stop. The following types of reduction have been recorded:

1. -i- plus -aˀa- reduces to -eˀe-:

séˀéč̇ᴀ (si- + -áˀáč̇ᴀ) *my tooth*

Compare:

záˀáč̇ᴀ (z- + -áˀáč̇ᴀ) *his tooth*

2. -iˀ- plus -aˀa- reduces to -é·ˀe-:

pé·ˀê·šᴀ (píˀ- + -áˀâ·šᴀ) *let him close it*

Compare:

šáˀâ·šᴀ (š- + -áˀâ·šᴀ) *you closed it*

3. -iˀ- plus a short -i- or -ə- with level or breathy accent reduces to -ì- when followed by a voiceless consonant:

pìkᴜᴘᴀᴡᴀ (píˀ- + -íkᴜᴘᴀᴡᴀ) *let him chop*
pìsk̓ᴀ (píˀ- + -ə̀sk̓ᴀ) *let him drink*

Compare:

zíkᴜᴘᴀᴡᴀ (z- + -íkᴜᴘᴀᴡᴀ) *he chopped*
gə̀sk̓ᴀ (g- + -ə̀sk̓ᴀ) *he drank*

Under similar conditions -iˀ- plus -a- reduces to -è- and -iˀ- plus -u- reduces to -ìu-:

pèzé (píˀ- + -ázé) *let him be talkative*
pìukái (piˀ- + -úkái) *let him be satisfied*

Compare:

gázé (g- + -ázé) *he is talkative*
kúkái (k- + -úkái) *he is satisfied*

If the following consonant is a sonorant, -iˀ- plus -a- becomes -eˀe-, -iˀ- plus -u- becomes -iy̓u-, and no change is involved if the second vowel is -i-:

| | |
|---|---|
| péˀéyakᴀ (píˀ- + -áyakᴀ) | *let him burn it* |
| píy̓úyá (píˀ- + -úyá) | *let him skin it* |
| píˀínàtᴀ (píˀ- + -ínàtᴀ) | *let him buy it* |

Compare:

| | |
|---|---|
| záyakᴀ (z- + -áyakᴀ) | *he burned it* |
| gúyá (g- + -úyá) | *he skinned it* |
| zínàtᴀ (z- + -ínàtᴀ) | *he bought it* |

Changes in the vowel following the pronominal suffix of Type B intransitive verbs are only partly explained in terms of the regular patterns of vowel reduction. The shift to -e or -ᴇ in the first person forms of verbs normally taking -a or -ᴀ follows the regular pattern of reduction in which -i- plus -a- becomes -e-:

| | |
|---|---|
| ˀé·sé (ˀé·- + -si- + -á) | *my name* |
| cá·sᴇ (cá·- + -si- + -ᴀ) | *I breathed* |

Compare:

| | |
|---|---|
| ˀé·gá | *his name* |
| cá·kᴀ | *he breathed* |

The shift to -e or -ᴇ in the first person forms of verbs normally occurring with -u or -ᴜ, however, does not result from any regular pattern of reduction:

| | |
|---|---|
| zùsᴇ | *I went* |
| zùkᴜ | *he went* |

## VOICING

Voiceless vowels occurring in the final syllable (and sometimes those occurring in the penultimate syllable) of a word become voiced under certain conditions of suffixation. A word-final voiceless vowel becomes voiced if it is followed by a suffix containing a voiced vowel:

| | |
|---|---|
| dʸùkᴀčanikᴜyᴀ (dʸùkᴀčᴀ+-nikᴜyᴀ) | *you are looking at me* |
| dáˀáċinu· (dáˀáċɪ+-nu·) | *when he arrived* |

Compare:

| | |
|---|---|
| dʸùkᴀčᴀ | *you saw me* |
| dáˀáċɪ | *he arrived* |

Suffixes consisting of a glottalized sonorant followed by a voiceless vowel have a similar effect on a preceding vowel:

| | |
|---|---|
| gàguṅᴇ (gàkᴜ+-ṅᴇ) | *they bit him* |
| čúčaṅⱻ (čúčᴀ+-ṅⱻ) | *maybe they two fell* |

Compare:

| | |
|---|---|
| gàkᴜ | *he bit him* |
| čúčᴀ | *maybe he fell* |

A voiceless vowel cluster becomes voiced when followed by any suffix:

sč̓ìgaitᴇ (sč̓ìkᴀɪ+-tᴇ) *I (didn't) lie down*

Compare:

sk̓ùikᴀɪ *I lay down*

Vowel clusters resulting from the suffixation of -kᴜyᴀ (see "Miscellaneous Processes") are likewise voiced:

su̓beukᴜyᴀ (su̓pᴇ+-kᴜyᴀ) *I am eating*

Compare:

su̓pᴇ *I ate*

Certain final voiceless vowels become voiced and long when followed by any suffix:

ṣáudʸúmiše·tᴇ (ṣáudʸúmɪšᴇ+-tᴇ) *we (don't) remember you*

Compare:

ṣáudʸúmɪšᴇ (ṣáudʸúmɪ+plural suffix, -šᴇ) *we remember you*

It cannot be predicted from the phonological environment whether or not a voiceless vowel undergoes this change (see "Stem variants"). The fact is indicated in the listing of forms by the vowel length symbol in parentheses:

-šᴇ(·) *plural suffix*

A sequence (vowel + unglottalized semivowel + vowel) in which neither vowel is accented, behaves as a single unit with respect to voicing; it is either completely voiceless or completely voiced. A voiceless sequence of this type becomes voiced when followed by any suffix:

ṣàtɪguyasⱻ (ṣàtɪkᴜyᴀ+-sⱻ) *you are crying*

Compare:

ṣàtɪkᴜyᴀ *you cried*

Of much less frequent occurrence than the above processes is the unvoicing of a stem-final vowel. This occurs when a completely voiceless suffix follows a stem which normally terminates in an unaccented voiced vowel preceded by a voiceless consonant:

s̓áutɪsⱻ (s̓áudi+-sⱻ) *I am planting*

Compare:

s̓áudi *I planted*

The alternation between aspirated and unaspirated consonants seen in some of the examples cited in this section is closely linked to the voicing and unvoicing of vowels. The unaspirated consonants, b, d, g, z, and ẓ, do not occur preceding voiceless vowels. When a normally voiced vowel is unvoiced, as in *I am planting*, a preceding consonant of this group changes to its aspirated counterpart, p, t, k, c, or ç. When a normally voiceless vowel is voiced, a preceding aspirated consonant is usually replaced by its unaspirated counterpart:

gàguṅᴇ (gàkᴜ+-ṅᴇ) *they bit him*

There are, however, exceptions to the latter rule, in which an aspirated consonant is retained when the following vowel becomes voiced:

zíkᴜpawaṅᴇ (zíkᴜpᴀᴡᴀ+-ṅᴇ) *they chopped*

Compare:

zíkᴜpᴀᴡᴀ *he chopped*

## MISCELLANEOUS PROCESSES

*Vowel assimilation.*—The vowels -a- or -ə- occurring in prefixes of the shape CVC- change to -u- when the prefix is attached to verb stems beginning in -u-:

gúẓùkᴀčᴀ (gə́ẓ- + -ùkᴀčᴀ) *he saw you*
túˀúdʸašɪ (táˀ- + -údʸašɪ) *maybe I fasted*

Compare:

gə́ẓàkᴜ (gə́ẓ-+àkᴜ) *he bit you*
táˀàutᴀ (táˀ-+-àutᴀ) *maybe I killed it*

The vowel cluster -ai- changes to -ei- following an alveopalatal consonant:

čéiẇᴀdʸaṁᴇ (č- + -áiẇᴀdʸaṁᴇ) *they assembled*

Compare:

sáiẇᴀdʸaṁᴇ *we assembled*

*Change from glottal to level accent.*—A glottal accent in the thematic adjunct normally changes to a level accent following a pronominal prefix containing a glottalized consonant:

č̇úpᴇ (č̇- + -u̇pᴇ) *eat*

Compare:

ṣu̇pᴇ *you ate*

This type of change does not affect the ȧ allomorph of the passive voice prefix:

sk̇ȧdʸaˀtᴀ (sk̇u- + -ȧ- + -ádʸaˀtᴀ) *I was caught*

Certain verb stems with a glottalized sonorant following the thematic adjunct show a shift to a plain sonorant when the pronominal prefix contains a glottalized consonant:

č̇úwànᴇ (č̇- + -úẇànᴇ) *hunt*

Compare:

ṣúẇànᴇ *you hunted*

The glottalized sonorant in stems of this kind may have developed from a plain sonorant preceded by a glottal accent in the thematic adjunct, and thus undergoes the above change. Other stems with a glottalized sonorant in a comparable position do not show this change:

| | |
|---|---|
| k̇áẇᴀꜱdá | *it is sour* |

*Introduction of -u-.*—The addition of the continuative suffix -kᴜyᴀ to a verb stem ending in -a, -e, or their voiceless counterparts, results in the formation of a vowel cluster the second member of which is -u-:

| | |
|---|---|
| su̇beukᴜyᴀ (su̇pᴇ + -kᴜyᴀ) | *I am eating* |
| síẇî·deyaukᴜyᴀ (síẇî·tᴇyᴀ + -kᴜyᴀ) | *I am worshiping* |

Compare:

| | |
|---|---|
| su̇pᴇ | *I ate* |
| síẇî·tᴇyᴀ | *I worshiped* |

*Change of ç̣ to t.*—The phoneme ç in the final syllable of a word changes to t when followed by a high front vowel:

| | |
|---|---|
| súẇî·tɪtᴀ (súẇî·çᴀ + -(i)tᴀ) | *I am making it*[2] |

Compare:

| | |
|---|---|
| súẇî·çᴀ | *I made it* |

Certain pronominal prefixes also show a shift from a retroflexed affricate to an alveolar stop (e.g., sə́ẓ- and sə́d-; see charts 1 and 2). These allomorphs undoubtedly have developed from the process outlined above, but are, in the present stage of the language, no longer phonologically defined. Forms ending in d sometimes occur before vowels other than i:

| | |
|---|---|
| sə́da | *I am* |

# MORPHOLOGY

## UNITS OF ANALYSIS

While the validity of the *word* as a universal linguistic unit is sometimes questioned, it is found convenient in this description of the grammatical structure of Santa Ana Keresan to recognize such a unit. The morphology-syntax division employed here is based on the assumption that the word can be defined with sufficient precision for descriptive purposes. This does not mean, however, that there may not remain a certain degree of arbitrariness in the drawing of some word boundaries.

The principal criterion for recognizing words is that of unlimited substitutability at word boundaries.[3] Severe restrictions on the number and types of items that may be introduced into an utterance at a morpheme boundary is taken as an indication that the boundary is an infraword boundary. The boundary between a verb core and a following plural subject suffix, for instance, is of this type. The only items that may be introduced at this point are aspect and/or benefactive morphemes, neither of which ever occurs except following a verb core.

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[2] For an explanation of the change in the stem-final vowel, see "Inflectional affixes" and "Stem variants."

[3] A full treatment of this approach to the definition of a word is given in Greenberg, 1957, pp. 27–34.

A morpheme boundary at which a wide variety of items may be introduced, on the other hand, is regarded as a word boundary. Although a verbal auxiliary is closely linked to a preceding verb core and is meaningless in isolation, it is, nevertheless, a separate word according to the above criterion. Not only may a number of suffixes occur following the verb core and preceding the auxiliary, but also items which, on the basis of distributional criteria, are themselves free words may be introduced at this point.

Words may be exhaustively segmented into *morphemes.* The term is used here in the sense generally used in American descriptive linguistics and includes word roots as well as various kinds of derivational and inflectional affixes and clitics. *Clitics* in Santa Ana Keresan are morphemes which, following the distributional criteria for marking word boundaries, are parts of words. They differ from affixes in that they are not so closely linked phonologically to the rest of the word. Specifically, they do not cause morphophonemic voicing of a preceding voiceless vowel and are much more likely than are affixes to be separated from the rest of the word by a pause.

## WORD CLASSES

Three major word classes are distinguished on the basis of their internal structure. Of these, the verbs and the verbal auxiliaries occur with inflectional affixes. The third major word class is composed of all uninflected words.

Three principal levels of internal structuring are recognized in words: inflection, stem formation, and derivation. The terms *inflection* and *inflectional affixes* are used only with reference to those affixes which are external to the *stem. Stem formation* involves the combination of a *thematic adjunct* with a *core* and may include the addition of a benefactive suffix as well. The term *derivation* is used with reference to the internal structuring of certain verb cores and of some words of the uninflected class. Although *clitics* are, by definition, parts of words rather than free words, they are disregarded in the following description of word structure and are reserved for separate consideration.

The general structure of the three major word classes may be distinguished as follows:

1. Verbs are always inflected, always include stem formation and sometimes include derivation.
2. Verbal auxiliaries are always inflected but never include stem formation or derivation.
3. Uninflected words include neither inflection nor stem formation but may include derivation.

Specific morphemes involved in each level of structuring also may serve to distinguish the major word classes. Verbs are distinguished from verbal auxiliaries, for instance, in that all verb stems are potentially capable of occurring with a future tense marker while verbal auxiliaries never include this morpheme.

## VERBS

### VERB INFLECTION

### GRAMMATICAL CATEGORIES

The following grammatical categories are expressed by verb inflection, or, less commonly, by changes in the verb stem:

*Subject person.*—First, second, or third person subject is recognized in all intransitive verbs in the non-future tense. It is most commonly indicated by a prefix, although in some verbs the pronominal element is a suffix:

| | | | |
|---|---|---|---|
| s-u̇pᴇ | *I ate* | zù-sᴇ | *I went* |
| ṣ-u̇pᴇ | *you ate* | zù-ṣᴜ | *you went* |
| k-u̇pᴇ | *he ate* | zù-kᴜ | *he went* |

In addition, some verbs occur with a pronominal morpheme indicating indefinite subject:

| | |
|---|---|
| sk̇-âuk̇ui | *one's wives* |

*Subject-object person.*—The subject and object of every transitive verb in the non-future tense are indicated by a single prefix. Seven principal subject-object combinations are recognized.

| | |
|---|---|
| First person subject with third person object: s-èkᴜ | *I bit him* |
| Second person subject with third person object: ṣ-àkᴜ | *you bit him* |
| Third person subject with third person object: g-àkᴜ | *he bit him* |
| First person subject with second person object: ṩ-àkᴜ | *I bit you* |
| Second person subject with first person object: č̇-àkᴜ | *you bit me* |
| Third person subject with first person object: sk̇-àkᴜ | *he bit me* |
| Third person subject with second person object, gə́ẓ-àkᴜ | *he bit you* |

In some, but not all, transitive verbs a fourth person subject with third person object is recognized which is distinct from the third person subject with third person object:

| | |
|---|---|
| g-àkᴜ | *he (third person) bit him* |
| ċ-àkᴜ | *he (fourth person) bit him* |

Fourth person is used when the subject of the action is obscure, as when the speaker is telling of something that he himself did not observe. It is also used when the subject of the action is inferior to the object, as when an animal is the subject and a human being the object.

*Number.*—Singular, dual, and plural number are recognized in both the subject of intransitive verbs and in the subject and object of transitive verbs. The dual and plural of transitive verb subjects are normally expressed by suffixation, while the absence of number suffixes indicates singular subject:

| | |
|---|---|
| gàkᴜ | *he bit him* |
| gàgu-ṅⱻ | *they two bit him* |
| gàgu-ṅᴇ | *they bit him* |

Subject number of intransitive verbs may be indicated in a variety of ways:

1. By suffixation as in the case of transitive verbs:

| | |
|---|---|
| zíkᴜᴘᴀᴡᴀ | *he chopped* |
| zíkᴜpawa-ṅⱻ | *they two chopped* |
| zíkᴜpawa-ṅᴇ | *they chopped* |

2. By changes in the thematic adjunct (i.e., the vowel or vocalic complex that ordinarily immediately follows the pronominal affix). These changes are usually accompanied by other number markers but may sometimes constitute the only indication of number:

| | |
|---|---|
| g-áu-dʸašɪ | *he fasted* |
| g-ú·ˀù-dʸašɪ | *they two fasted* |
| g-ú·ẇà-dʸašɪ | *they fasted* |

3. By the prefixation of different sets of pronominal allomorphs together with suffixation and/or changes in the thematic adjunct:

| | |
|---|---|
| s-ìsk̇ᴀ | *I drank* |
| sə́ẓ-ȧsk̇ᴀ | *we two drank* |
| sə́ẓ-ȧsk̇ᴀtᴀ | *we drank* |

Object number of transitive verbs is indicated by changes in the thematic adjunct:

| | |
|---|---|
| s-è-kᴜ | *I bit him* |
| s-é·ˀè-kᴜ | *I bit them two* |
| s-éiẏà-kᴜ | *I bit them* |

*Tense.*—Future and non-future tenses are recognized. Verbs which include a pronominal affix are in the non-future tense. Future tense is indicated by replacing the pronominal affix with a tense marker. The pronominal element is then incorporated in a separate word, the verbal auxiliary, which follows the verb:

| | | | |
|---|---|---|---|
| ṣáizúᴡᴀ | *I paid you* | ṅí·zúᴡᴀ ṣáuṁᴀ | *I will pay you* |
| su̇ᴘᴇ | *I ate* | nu̇ᴘᴇ si | *I will eat* |

*Mode.*—Pronominal affixes indicate not only the person of the subject or the subject and object but also indicate the mode. For each mode there is a distinctive set of pronominal affixes. A total of six modes are recognized; indicative, negative, dubitative, hortative, negative hortative, and future hortative. For each subject-object combination, however, only certain modes are indicated formally in the inflection:

| | | | |
|---|---|---|---|
| ċ-í·zúWA | *I paid him* | š-í·zúWA | *you paid him* |
| sdʸ-í·zúWA | *I (didn't) pay him* | š-í·zúWA | *you (didn't) pay him* |
| ṫ-í·zúWA | *maybe I paid him* | c-í·zúWA | *maybe you paid him* |
| k̇á-izúWA | *let me pay him* | p-í·zúWA | *pay him* |
| ṅ-í·zúWA | *let me (not) pay him* | sdʸ-í·zúWA | *(don't) pay him* |
| ṅ-í·zúWA | *let me pay him (in the future)* | c-í·zúWA | *pay him (in the future)* |

Certain particles characteristic of specific modes may precede the verb and are often necessary in order to avoid ambiguity. Verbs in the negative mode, for instance, are always preceded by the negative particle zázi, and those in the negative hortative mode by the particle bâ·mí·:

| | |
|---|---|
| zázi sdʸí·zúWA | *I didn't pay him* |
| bâ·mí· sdʸí·zúWA | *don't pay him* |

*Voice.*—Reflexive-reciprocal and passive voice are indicated by a prefix following the pronominal prefix of transitive verbs together with a distinctive set of pronominal allomorphs. Reflexive and reciprocal voice are indicated by the prefix -a- and are distinguished one from the other by different thematic adjuncts:

| | |
|---|---|
| ṡ-à-ukAČA | *I saw myself* |
| ṡ-à-ukAčanətI | *we two saw ourselves* |
| ṡ-á·-ẏàkAčanətI | *we two saw each other* |

Passive voice is indicated by the prefix -áˀa- or -à- and takes the plural subject suffix:

| | |
|---|---|
| sk̇-áˀá-izúwa·-ṅE | *I was paid* |

*Aspect.*—There are three aspect morphemes. The most common of these expresses continuative action:

| | |
|---|---|
| síukAča-nikUYA | *I am looking at him* |

Compare:

| | |
|---|---|
| síukAČA | *I saw him* |

A less common aspect morpheme indicates unfulfilled action:

| | |
|---|---|
| súpE-WE | *I have come to eat* |

Compare:

| | |
|---|---|
| súpE | *I ate* |

The third aspect morpheme indicates a remote state and occurs with only a limited number of verb stems:

| | |
|---|---|
| gə́·ṫâ·-ᴍᴀ | *it is full (something remote from the speaker)* |

Compare:

| | |
|---|---|
| gə́·ṫá | *it is full (something at hand)* |

*Condition.*—Verbs which are linked to the larger context by various kinds of subordinate or conditional relationships occur with one of a class of suffixes of rather elusive semantic categorization:

| | |
|---|---|
| sk̇úizúwa·-ne | *when he paid me* |
| sk̇úizúwa·-nu· | *if he pays me* |

Compare:

| | |
|---|---|
| sk̇úizúᴡᴀ | *he paid me* |

In addition to the patterns of inflection indicated above, the expression of specific grammatical categories sometimes involves irregular changes in the verb stem (see pp. 99 ff.). In some cases there are changes of such a revolutionary character that the phenomenon may best be described as stem suppletion, which most commonly involves intransitive verbs in the three numbers:

| | |
|---|---|
| zù-ꜱᴇ | *I went* |
| sə́d-éˀèyᴜ | *we two went* |
| sə́d-ėkᴜ | *we went* |

In rare cases, the expression of continuative action or of plural object number in transitive verbs involves stem suppletion:

| | | | |
|---|---|---|---|
| ċ-àkᴜ | *he bit him* | ċ-íẏêiṅᴀ | *I found him* |
| ċ-â·ṗɪ-kᴜyᴀ | *he is biting him* | s-íwȧdê·ṅᴀ | *I found them* |

### INFLECTIONAL AFFIXES

Each inflectional affix is assigned an identification number and is a member of a century class. Century classes are numbered according to the relative order of occurrence of their members within transitive verbs. An exception to this sequential numbering of century classes is the case of classes 100 and 200 which are never represented in the same verb. Members of both Century Class 100 and 200 are always in initial position in the verb.

Century Class 100 includes all pronominal affixes.[4] Within the class are nine decade classes (100, 110, 120, 130, 140, 150, 160, 170, and 180), each of which includes affixes indicating a specific subject or subject-object combination. Within each decade class, with the exception of 180, there are six morphemes (numbered 101–106, 111–116, etc.), each of which is characteristic of a specific mode. Century

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[4] These are termed "affixes" rather than specifically "prefixes" or "suffixes" because, although they occur most commonly as prefixes, there are some intransitive verbs in which they occur as suffixes.

Class 200 consists of one morpheme, the future tense affix. Century Class 300 consists of voice prefixes. Century Class 400 consists of aspect suffixes. Century Class 500 consists of number suffixes. Century Class 600 consists of condition suffixes.

Affixes of Century Class 100 are tabulated in charts 1 and 2 and comprise a set of pronominal indicators. Those affixes which occur with transitive verbs in their primary paradigms appear in chart 1; those occurring with intransitive verbs and with transitive verbs in their secondary paradigms are listed in chart 2. The two charts overlap to a considerable extent, as many forms appear both with transitive and intransitive verbs. This overlap is so extensive that it is convenient to group those pronominal indicators which occur with intransitive verbs together with those which occur with transitive verbs and which indicate first, second, or third person subject with third person object. Affix 101, for instance, occurs with intransitive verbs indicating first person subject and with transitive verbs indicating first person subject with third person object. The difference lies in the fact that there are more allomorphs of each affix affiliated with intransitive verbs than with transitive verbs. The overlapping decade classes appear in the two charts with the designations T or I (e.g., 100T, 100I) indicating transitive or intransitive. The morpheme membership of T and I decade classes are identical: both 100T and 100I, for example, consist of affixes 101, 102, 103, 104, 105, and 106. Decade Class 100I, however, includes many more allomorphs than does Decade Class 100T.

Affixes of Century Class 100 form a rather elaborate system. With few exceptions, there is a distinctive affix for each subject-object combination within each of the three principal modes (indicative, dubitative, and hortative). There is, in addition, a distinctive affix for certain subject-object combinations within the negative and the negative hortative modes. A sixth mode, the future hortative, is indicated by affixes which, in most instances, are identical in form with the corresponding dubitative, hortative, or negative hortative affix. For purposes of description, the entire series is filled-in for each of the six modes, although this results in assigning two numbers to certain forms that, from one point of view at least, may be regarded as the same affix (e.g., affixes 111 and 112, 121 and 122). Thus, there are eight decade classes, each of which contains six morphemes indicating the same subject-object combination, plus Decade Class 180 which consists of a single morpheme. Each of the six morphemes within a decade class indicates a different mode. Within each mode the final digit of the affix identification number remains constant.

Allomorphs of each pronominal affix are distinguished by upper case letters following the identification number. All allomorphs listed

| Decade Class | Person | | Mode | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Subj. | Obj. | Indicative | Negative | Dubitative | Hortative | Negative hortative | Future hortative |
| 100T | 1st | 3d | 101A si<br>101B č̓i | 102A sg<br>102B sd$^y$i | 103A ti<br>103B t̓i | 104A ka<br>104B k̓a | 105A ni<br>105B n̓i | 106A ni<br>106B n̓i |
| 110T | 2d | 3d | 111A ş<br>111B ši | 112A ṣ<br>112B ši | 113A c̣<br>113B ci | 114A c̣<br>114B ci | 115A sg<br>115B sd$^y$i | 116A c̣<br>116B ci |
| 120T | 3d | 3d | 121A g<br>121B zi | 122A g<br>122B zi | 123A d$^y$<br>123B di | 124A pi<br>124B p̓i | 125A pi<br>125B p̓i | 126A pi<br>126B p̓i |
| 130 | 4th | 3d | 131A zi<br>131B c̓ | 132A zi<br>132B c̓ | 133A di<br>133B t̓ | 134 p̓i | 135 p̓i | 136 p̓i |
| 140 | 1st | 2d | 141A ṣa<br>141B ṣ̓a | 142A ṣa<br>142B ṣ̓a | 143A ẓa<br>143B c̣̓a | 144A ṣa<br>144B ṣ̓a | 145A ṣa<br>145B ṣ̓a | 146A ẓa<br>146B c̣̓a |
| 150 | 2d | 1st | 151A d$^y$u<br>151B č̓u | 152A d$^y$u<br>152B č̓u | 153A d$^y$u<br>153B č̓u | 154A g̣u<br>154B k̓u | 155A g̣u<br>155B k̓u | 156A d$^y$u<br>156B č̓u |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 160 | 3d | 1st | 161A sg<br>161B sk̇u | 162A sdʸ<br>162B sč̇ | 163A tə́ẓ<br>163B tə́di | 164A nə́ẓ<br>164B nə́di | 165A nə́ẓ<br>165B nə́di | 166A nə́ẓ<br>166B nə́di |
| 170 | 3d | 2d | 171A gə́ẓ<br>171B gə́di | 172A gə́ẓ<br>172B gə́di | 173A dʸə́z<br>173B dʸídi | 174A ẓ<br>174B di | 175A sdʸ<br>175B sč̇ | 176A dʸə́ẓ<br>176B dʸídi |

Chart 1.—*Century Class 100 Pronominal Affixes Occurring with Transitive Verbs in Their Primary Paradigms*

| Decade Class | Person | Mode | | | | | |
|---|---|---|---|---|---|---|---|
| | Subj. | Indicative | Negative | Dubitative | Hortative | Negative hortative | Future hortative |
| 100 I | 1st | | | | | | |
| | | 101A si | 102A sg | 103A ti | 104A ka | 105A ni | 106A ni |
| | | 101B c̓i | 102B sdʸi | 103B t̓i | 104B k̓a | 105B n̓i | 106B n̓i |
| | | 101C s | 102C sk | 103C t | 104C k | 105C ka | 106C n |
| | | 101D s̓ | 102D sk̓ | 103D táʔ | 104D káʔ | 105D k̓a | 106D n̓ |
| | | 101E s̓i | 102E sga | 103E tə́ẓ | 104E ni | 105E k | 106E níʔ |
| | | 101F síʔ | 102F skáʔ | 103F tə́d | 104F n̓i | 105F káʔ | 106F nə́ẓ |
| | | 101G sə́ẓ | 102G sdʸ | 103G tə́di | 104G n | 105G n | 106G nə́d |
| | | 101H sə́d | 102H sč̓ | 103H tíʔ | 104H n̓ | 105H n̓ | 106H nə́di |
| | | 101I sg̓ | 102I sč̓i | | 104I níʔ | 105I níʔ | |
| | | 101J sk̓u | 102J sč | | 104J nə́ẓ | 105J nə́ẓ | |
| | | | | | 104K nə́d | 105K nə́d | |
| | | | | | 104L nə́di | 105L nə́di | |
| | | | | | 104M š | 105M š | |
| | | | | | 104N š̓ | 105N š̓ | |
| | | | | | 104O st | 105O st | |
| | | | | | 104P stíʔ | 105P stíʔ | |
| | | | | | 104Q st̓i | 105Q st̓i | |
| 110 I | 2d | | | | | | |
| | | 111A ṣ | 112A ṣ | 113A c̣ | 114A p | 115A sg | 116A c̣ |
| | | 111B ši | 112B ši | 113B ci | 114B pi | 115B sdʸi | 116B ci |
| | | 111C š | 112C š | 113C c | 114C t̓ | 115C sk | 116C c |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 111D ṣ̓<br>111E gə́ẓ<br>111F gə́d<br>111G gə́di | 112D ṣ̓<br>112E gə́ẓ<br>112F gə́d<br>112G gə́di | 113D c̣á?<br>113E dʸə́ẓ<br>113F dʸíd<br>113G dʸídi | 114D č̓<br>114E ẓ<br>114F d<br>114G di<br>114H ? | 115D sk̓<br>115E sga<br>115F ská?<br>115G sdʸ<br>115H sč̓<br>115I sč̓i<br>115J sč | 116D c̣á?<br>116E dʸə́ẓ<br>116F dʸíd<br>116G dʸídi |
| 120 I | 3d | 121A g<br>121B zi<br>121C k<br>121D k̓<br>121E ga<br>121F ká?<br>121G z<br>121H c̓<br>121I c̓i<br>121J c | 122A g<br>122B zi<br>122C k<br>122D k̓<br>122E ga<br>122F ká?<br>122G z<br>122H c̓<br>122I c̓i<br>122J c | 123A dʸ<br>123B di<br>123C č<br>123D č̓<br>123E dʸa<br>123F čá?<br>123G d<br>123H t̓<br>123I t̓i<br>123J t | 124A pi<br>124B p̓i<br>124C p<br>124D p̓<br>124E pa<br>124F pá?<br>124G pí? | 125A pi<br>125B p̓i<br>125C p<br>125D p̓<br>125E pa<br>125F pá?<br>125G pí? | 126A pi<br>126B p̓i<br>126C p<br>126D p̓<br>126E pa<br>126F pá?<br>126G pí? |
| 180 | Indefinite | 181A sg<br>181B sk̓<br>181C sč<br>181D sč̓ | | | | | |

Chart 2.—*Century Class 100 Pronominal Affixes Occurring with Intransitive and Transitive Verbs in Their Secondary Paradigms*

in the charts are morphologically defined, i.e., their occurrence cannot be predicted in terms of phonological environment. Phonologically defined allomorphs (e.g., gúẓ derived by morphophonemic vowel assimilation from gə́ẓ) are not listed in the charts but may be predicted from the morphophonemic processes described under "Morphophonemics."

The same upper case letters have been used to identify allomorphs which tend to be affiliated with the same group of verbs. This consistency is especially evident in transitive verbs and within each decade class:

| | |
|---|---|
| čí·zúᴡᴀ (101B+verb stem) | *I paid him* |
| sdʸí·zúᴡᴀ (102B+verb stem) | *I (didn't) pay him* |
| t̓í·zúᴡᴀ (103B+verb stem) | *maybe I paid him* |

etc.

This tendency also is manifested to a lesser degree from one decade class to another within each mode:

| | |
|---|---|
| čí·zúᴡᴀ (101B+verb stem) | *I paid him* |
| ší·zúᴡᴀ (111B+verb stem) | *you paid him* |
| zí·zúᴡᴀ (121B+verb stem) | *he paid him* |

etc.

The fact that not all affixes have the same number of allomorphs, makes it obvious that this tendency cannot hold true in the case of every verb. Intransitive verbs, especially, often show a shift from one series of allomorphs to another even within the same decade class:

| | |
|---|---|
| sə́ẓâ·ˀᴀbe (101G+verb stem) | *we two ate* |
| sgâ·ˀᴀbeˀ (102A+verb stem) | *we two (didn't) eat* |
| tə́ẓâ·ˀᴀbe (103E+verb stem) | *maybe we two ate* |

etc.

The phonetic shape and distribution of many affixes of Century Class 100 is suggestive of certain historical processes. It is probable that many of the B-allomorphs were derived from the corresponding A-allomorphs either through glottalization (compare 141B with 141A, for example) or through palatalization (compare 111B with 111A). B-allomorphs that appear to be a palatalized form of the corresponding A-allomorphs nearly always occur with verb stems beginning in -i-. The few exceptions prevent the phenomenon from being described as a morphophonemic process.

Another type of historical development is suggested by the overlap in phonetic form of certain allomorphs of affixes belonging to different decade classes. This overlap is evident when one compares affixes of Decade Class 100I with those of 160, affixes of Decade Class 110I with those of 170, and affixes of Decade Class 120 with those of 130. This suggests that the system of pronominal affixation may have developed from one in which intransitive subject and transitive object were equated.

Century Class 200 is comprised of a single morpheme which indicates future tense. It replaces affixes of Century Class 100 as to position in the verb but not as to function. The future tense affix includes the following allomorphs:

| | |
|---|---|
| 201A | n |
| 201B | ni |
| 201C | ṅ |
| 201D | ṅi |
| 201E | níˀ |
| 201F | nə́ẓ |
| 201G | nə́d |
| 201H | nə́di |

Examples of allomorphs of affix 201 are as follows:

| | |
|---|---|
| n-u̇pᴇ | *will eat* |
| ní-ukᴀčᴀ | *will see* |
| ṅ-àutᴀ | *will kill* |
| ṅì-udiˀ | *will give* |
| nikᴜpawaṅe· (níˀ- + -íkᴜpawaṅe·) | *will chop (plural subject)* |
| nə́ẓ-â·ˀᴀbeˀ | *will eat (dual subject)* |
| nə́d-aˀ | *will be* |
| nə́dîubu·cɪ | *will be frightened* |

Century Class 300 contains two morphemes, 301 and 302, which function as voice indicators and occur prefixed to transitive verbs following the pronominal prefix.

Affix 301 expresses reflexive or reciprocal action with the single allomorph 301 -a-. Affix 302 indicates passive voice and includes two allomorphs: 302A -áˀa- and 302B -ȧ-. The following examples illustrate the affixes of Century Class 300:

| | |
|---|---|
| ṡ-à-ukᴀčᴀ | *I saw myself* |
| sk̇-áˀá-izúwa·ṅᴇ | *I was paid* |
| sk̇-ȧ-dʸaˀtᴀ | *I was caught* |

Century Class 400 is comprised of three morphemes, 401, 402, and 403, which function as aspect indicators and (except for 401H) are suffixed to verb stems.

Affix 401 indicates continuative action and includes the following allomorphs:

| | |
|---|---|
| 401A | -kᴜyᴀ |
| 401B | -nikᴜyᴀ |
| 401C | -tɪkᴜyᴀ |
| 401D | -kᴜ |
| 401E | -(i)tᴀ(·) |
| 401F | -sⱻ |
| 401G | -čᴀdʸᴀyᴀ |
| 401H | reduplication of the verb core |

The following examples illustrate occurrences of allomorphs of affix 401:

| | |
|---|---|
| ṡúbeu-kʊyᴀ | *I am eating* |
| gùkᴀča-nikʊyᴀ | *he is looking at him* |
| ċídʸaˀ-tɪkʊyᴀ | *I am catching him* |
| káisk̇ə́·ˀⱻẓai-kʊ | *he is turning around* |
| síuk̇àicɪ-tᴀ | *I am hitting him* |
| ṡáutɪ-sⱻ | *I am planting* |
| k̇â·ni-čᴀdʸᴀyᴀ | *he is walking* |
| wə́k̇ə-wək̇ə-kᴀ | *it is shaking* |

Associated with allomorph 401E, -(i)tᴀ, is a change from -a or -ᴀ to -i or -ɪ in the stem-final vowel of the verb to which it is suffixed. Compares síuk̇àicᴀ *I hit him* with síuk̇áicɪtᴀ *I am hitting him.* Affix 402, which refers to unfulfilled action, contains the following allomorphs:

| | |
|---|---|
| 402A | -ṅᴇ(·) |
| 402B | -nᴇ(·) |
| 402C | -ᴡᴇ |

Illustrations of the occurrence of allomorphs of affix 402 are as follows:

| | |
|---|---|
| ċí·zúwa·-ṅᴇ | *I came to pay him* |
| síukᴀčᴀ-nᴇ | *I came to see him* |
| ṡúpᴇ-ᴡᴇ | *I came to eat* |

Affix 403 expresses remote state and has the single allomorph, 403 -mᴀ:

| | |
|---|---|
| gə́·ṫâ·-mᴀ | *it is full (something remote)* |

Century class 500 contains two morphemes, 501 and 502, which express subject number. They are suffixed either directly to the verb stem or follow affixes of Century Class 400. Affix 501 indicates dual subject and includes the following allomorphs:

| | | | |
|---|---|---|---|
| 501A | -ṅⱻ | 501E | -mətɪ |
| 501B | -nətɪ(·) | 501F | -ṁᴀṣʊtɪ |
| 501C | -dʸɪ | 501G | -ṣʊtɪ |
| 501D | -ṁⱻ | 501H | -pⱻ |

The occurrence of these allomorphs is illustrated by the following examples:

| | | | |
|---|---|---|---|
| síkʊpawa-ṅⱻ | *we two chopped* | sáisk̇ə́·ˀⱻ ẓai-mətɪ | *we two turned around* |
| ṡíukᴀča-nətɪ | *we two saw him* | ṡíuni-ṁᴀṣʊtɪ | *we two know him* |
| ṡídʸaˀ-dʸɪ | *we two caught him* | sə́dé·ˀᴇ-ṣʊtɪ | *we two are* |
| ṡáudi-ṁⱻ | *we two planted* | síẇî·deya-pⱻ | *we two worshipped* |

Affix 502, expressing plural subject, has the following allomorphs:

| | | | |
|---|---|---|---|
| 502A | -ṅᴇ(·) | 502H | -ᴡᴇ |
| 502B | -nᴇ(·) | 502I | -šᴇ(·) |
| 502C | -tᴀ(·) | 502J | -šɪ |
| 502D | -ṁᴇ | 502K | -ˀᴇ |
| 502E | -mᴇ | 502L | -(i)yᴀ |
| 502F | -ṁᴀsᴀ | 502M | -sᴇ(·) |
| 502G | -ᴡᴀ | | |

Examples of the allomorphs of affix 502 are as follows:

| | | | |
|---|---|---|---|
| sikᴜpawa-ṅᴇ | *we chopped* | síẇî·deya-wᴀ | *we worshiped* |
| šíukᴀčᴀ-nᴇ | *we saw him* | záʔâ·ṫᴀ-wᴇ | *they opened it* |
| šídʸaʔ-tᴀ | *we caught him* | súẇᴀdʸúmⱻ-šᴇ | *our brother* |
| sáẇá·di-ṁᴇ | *we planted* | zéʔé·baiʔ-šɪ | *we went to sleep* |
| sáẏá·sk̇ə́·ʔⱻẓai-mᴇ | *we turned around* | súẇawàne-ʔᴇ | *we hunted* |
| šíuni-ṁᴀsᴀ | *we know him* | ší·zúwi·tɪ-yᴀ | *we are paying him* |
| | | šíukᴀčaniguya-sᴇ | *we are looking at him* |

Century Class 600 is comprised of three morphemes, 601, 602, and 603, which express conditional or contrary-to-fact action. Affix 601 has two allomorphs, 601A -ne and 601B -de. Affix 602 has a single allomorph, 602 -nu·. Affix 603 likewise has a single allomorph, 603 -tᴇ. The following examples illustrate the occurrence of these allomorphs:

| | |
|---|---|
| sk̇úizúwa·-ne | *when he paid me* |
| gùkᴀčane·-de | *when they saw him* |
| sk̇úizúwa·-nu· | *if he pays me* |

It is difficult to differentiate affixes 601 and 602 by meaning function except that the latter apparently has a dubitative connotation lacking in the former. Affix 603 occurs with many verbs in the negative mode which have a plural subject:

| | |
|---|---|
| sgùkᴀčane·-tᴇ | *we (didn't) see him* |

### DISTRIBUTION OF AFFIXES

The distribution within verbs of the inflectional affixes, the thematic adjunct (TA), the verb core, and the benefactive suffix (B) serves to distinguish three major structural types. These are represented by three formulas:

1. $\text{TV} = +100 \pm 300 + \text{TA} + \text{Core} \pm 400 \pm \text{B} \pm 500 \pm 600/$
   $+200 \pm 300 + \text{TA} + \text{Core} \pm 400 \pm \text{B} \pm 500$

Transitive verbs are composed of three obligatory parts, a prefix of either Century Class 100 or Century Class 200 followed by a thematic adjunct and a verb core. Prefixes of Century Class 300 and suffixes of Century Classes 400, 500, and 600 as well as the benefactive suffix occur in some, but not all, verbs of this type. Suffixes of Century Class 600 may occur only if the verb is prefixed by members of Century Class 100.

2. $\text{IVA} = +100 + \text{TA} + \text{Core} \pm 400 \pm 500 \pm 600/$
   $+200 + \text{TA} + \text{Core} \pm 400 \pm 500$

Intransitive verbs of Type A are composed of at least a prefix of either Century Class 100 or Century Class 200 followed by a thematic adjunct and a verb core. They may include, in addition, suffixes of Century Classes 400, 500, or 600.

3. $\text{IVB} = +\text{Core} \pm 400 + 100 + \text{TA} \pm 600/$
   $+\text{Core} \pm 400 \pm 200 + \text{TA}$

Intransitive verbs of Type B are composed of a verb core together with an affix of either Century Class 100 or 200 occurring as a suffix and followed by a thematic adjunct. An affix of Century Class 400 may follow the core and, in forms containing a member of Century Class 100, a suffix of Century Class 600 may follow the thematic adjunct.

A complete set of paradigms of transitive verbs in all of their possible inflections includes the following:

*Primary paradigms.*—Transitive verbs in their simplest forms, i.e., those which include only the three obligatory elements and which have unexpanded thematic adjuncts, are members of one of the primary paradigms. A transitive verb primary paradigm is composed of seven or eight forms based on the same verb stem, all belonging to the same mode, and each expressing a different pronominal reference. Examples of these paradigms are given in Appendix 1. The classification of verb stems on the basis of the specific allomorphs of Century Class 100 with which they occur in their primary paradigms is dealt with under "Verb Classes."

*Forms with prefixes of Century Class 300.*—Transitive verbs occurring with the reflexive-reciprocal or the passive voice prefix take distinctive sets of allomorphs of the pronominal prefixes. Furthermore, the class division evident in the primary paradigms is lacking in these forms; all transitive verbs take the same sets of allomorphs.

Verbs in the reflexive-reciprocal voice occur with the following set of pronominal allomorphs:

| | | | | | |
|---|---|---|---|---|---|
| ṡ | skáʔ | táʔ | káʔ | ṅ | ṅ |
| 101D | 102F | 103D | 104D | 105H | 106D |
| ṩ | ṩ | çáʔ | č̇ | skaʔ | çáʔ |
| 111D | 112D | 113D | 114D | 115F | 116D |
| káʔ | káʔ | čáʔ | páʔ | páʔ | páʔ |
| 121F | 122F | 123F | 124F | 125F | 126F |

Those in the passive voice occur with the following:

| | | | | | |
|---|---|---|---|---|---|
| sk̇u | sč̇ | ṫi | ni | ni | ni |
| 101J | 102H | 103B | 104E | 105A | 106A |
| š | š | c | ẓ | sč̇ | c |
| 111C | 112C | 113C | 114E | 115H | 116C |
| ċ | ċ | ṫ | ṗi | ṗi | ṗi |
| 121H | 122H | 123H | 124B | 125B | 126B |

Verbs in the passive voice regularly take the plural subject suffix:

sk̇-áʔá-izúwa·-ṅᴇ (101J+302A+stem+502A) *I was paid*

An alternative translation of this verb would be *they* (*certain unspecified persons*) *paid me.* This translation is consistent with the presence of the plural subject suffix and with the expansion of the thematic adjunct in forms indicating dual or plural persons being acted upon.

It is not consistent, however, with the presence of pronominal affixes of Decade Classes 100I, 110I, and 120I, which express first, second, and third person subject respectively.

The occurrence of allomorph 302B, -ȧ-, as opposed to 302A, -áˀa-, is apparently restricted to verbs having a voiceless and unglottalized core-initial consonant and a normally short and level accented thematic adjunct:

| | |
|---|---|
| č̓ídʸáwᴀ | *I stabbed him* |
| sk̓ȧdʸáwaṅᴇ | *I was stabbed* |

*Forms with suffixes of Century Class 400.*—Most transitive verb stems may occur with suffix 401, indicating continuous action. These forms occur with the same pronominal prefixes as occur in the primary paradigms:

| | |
|---|---|
| gùkᴀčanikᴜʏᴀ (121A+stem+401B) | *he is looking at him* |

Compare:

| | |
|---|---|
| gùkᴀčᴀ (121A+stem) | *he saw him* |

Subclasses of transitive verbs are based in part on their occurrence with specific allomorphs of 401 (see "Verb Classes"). A few transitive verbs are defective in that they never occur with affix 401. The occurrence of affix 402 is quite limited and has been recorded in relatively few verbs. The subclass to which the verb belongs determines which of the several allomorphs occur. There are no occurrences in the present data of transitive verbs which include affix 403.

*Forms with suffixes of Century Class 500.*—All transitive verbs, with the exception of a few defective stems, may occur with a subject number suffix, 501 or 502. In general, the same sets of allomorphs of Century Class 100 occur with these forms as occur in the primary paradigms:

| | |
|---|---|
| gùkᴀčanətɪ (121A+stem+501B) | *they two saw him* |
| gùkᴀčᴀnᴇ (121A+stem+502B) | *they saw him* |

Compare:

| | |
|---|---|
| gùkᴀčᴀ (121A+stem) | *he saw him* |

Forms expressing first person subject and third person object, however, are an exception. Verbs which in their primary paradigms occur with A-allomorphs of Decade Class 100 (101A, 102A, 103A, etc.) take allomorphs 101E, 102A, 103H, 104F, 105B, and 106B when the subject is dual or plural. Those with B-allomorphs in their primary paradigms occur with allomorphs 101E, 102B, 103H, 104F, 105B, and 106B in the dual and plural forms:

| | |
|---|---|
| š̓íukᴀčᴀnᴇ (101E+stem+502B) | *we saw him* |
| š̓í·zúwa·ṅᴇ (101E+stem+502A) | *we paid him* |

Compare:

| | |
|---|---|
| síukᴀčᴀ (101A+stem) | *I saw him* |
| č̓í·zúwᴀ (101B+stem) | *I paid him* |

The choice of allomorphs of suffixes 501 and 502 depends on the subclass to which the transitive verb belongs and on the presence or absence of affixes of Century Classes 200 and 400. The occurrence of these allomorphs is described more fully under "Verb Classes."

*Forms with suffixes of Century Class 600.*—Suffixes 601 and 602, in general, may be attached to any transitive verb in the non-future tense. This involves no concomitant changes in the allomorphs of other affixes which are present in the verb:

| | |
|---|---|
| sk̇úizúwa·ne (161B+stem+601A) | *when he paid me* |
| sk̇úizúwa·nu· (161B+stem+602) | *if he pays me* |

Compare:

| | |
|---|---|
| sk̇úizúwA (161B+stem) | *he paid me* |

Allomorph 601B rather than 601A occurs with verbs in which the subject is dual or plural:

| | |
|---|---|
| sk̇úizúwa·ṅe·de (161B+stem+502A+601B) | *when they paid me* |

Affix 603 is of much more limited distribution, occurring only in verbs with plural subject in the negative mode when other Century Class 600 suffixes are absent:

| | |
|---|---|
| sgùkAčane·tE (102A+stem+502B+603) | *we (didn't) see him* |

*Forms with prefix 201.*—All forms of transitive verbs outlined above, with the exception of those containing suffixes of Century Class 600, may be changed to the future tense by replacing the pronominal prefix with prefix 201. This results in a form of the verb that does not include subject-object person and which must be followed by a verbal auxiliary. Transitive verbs which occur with allomorph 101A in forms indicating first person subject with third person object take allomorph 201B in most future tense forms:

| | |
|---|---|
| síukAčA (101A+stem) | *I saw him* |
| níukAčA (201B+stem) | *will see* |

Those verbs which occur with allomorph 101B take allomorph 201D:

| | |
|---|---|
| č̇í·zúwA (101B+stem) | *I paid him* |
| ṅí·zúwA (201D+stem) | *will pay* |

Future tense verbs in the reflexive voice, however, occur with allomorph 201C rather than 201B or 201D:

| | |
|---|---|
| ṅàukAčA (201C+stem) | *will see oneself* |

The presence of affix 201 sometimes determines the choice of allomorphs of suffixes 501 and 502. Some verbs in the future tense take the same allomorph of a number suffix as do the corresponding non-future forms:

| | |
|---|---|
| ṅí·zúwa·ṅɘ (201D+stem+501A) | *will pay (dual subject)* |

Compare:

zí·zúwa·ṅⱻ (121B+stem+501A) *they two paid him*

Verbs occurring with allomorphs 502A, 502B, or 502C in the non-future tense show a lengthening and voicing of the suffix vowel in the future tense:

| | | |
|---|---|---|
| zí·zúwa·ṅᴇ | (121B+stem+502A) | *they paid him* |
| ṅí·zúwa·ṅe· | (201D+stem+502A) | *will pay him* (*plural subject*) |

Chart 3 summarizes all possible sequences of inflectional affixes representative of the six century classes and illustrates them with examples based on the verb *to see.* For each of the non-future forms in the chart there are parallel forms representing other modes and other subject-object persons, as well as forms incorporating other affixes of Century Classes 300, 400, 500, and 600. The multiplicity of forms based on a single verb core is further increased by the possibility of changes in the thematic adjunct and/or the inclusion of a benefactive suffix. These, however, are regarded as stem changes rather than inflection and are treated in that portion entitled "Stem Formation."

Type A intransitive verbs follow the same general pattern of inflection as transitive verbs, but occur with a more restricted inventory or inflectional affixes. These verbs, for example, never occur with affixes of Century Class 100 which express first person object (i.e., Decade Classes 150 and 160). Furthermore, specific intransitive verbs commonly lack the capacity for combining with affixes of one or more of the optionally occurring classes; few intransitive verbs exhibit the full pattern of inflection indicated for transitive verbs in chart 3. Affixes of Century Class 300, for instance, rarely occur with intransitive verbs. There are a few verbs, however, which are classified as intransitive on structural grounds, but which have a transitive meaning and which admit affixes of this class:

sk̓áˀàutᴀᴡᴀ (101J+302A+stem+502G) *I was killed*

Members of Century Classes 400 and/or 500 may likewise be lacking in the inventory of inflectional affixes with which specific Type A intransitive verb stems occur. Certain of these verbs have no distinctive continuative action forms, while others indicate dual and plural subject by changes in the stem rather than by inflection.

Type B intransitive verbs are even more restricted in their inflection than are Type A. They never occur with affixes of Century Class 500, and the expression of aspect is limited to the reduplication of the verb core to indicate continuative action (allomorph 401H):

| | |
|---|---|
| wə́k̓əkᴀ | *it moved* |
| wə́k̓əwək̓əkᴀ | *it is shaking* |

| | | |
|---|---|---|
| | 100+S<br>g-ùkAČA *he saw him*<br>200+S<br>ní-ukAČA *will see*<br>100+300+S<br>ká?-à-ukAČA *he saw himself*<br>200+300+S<br>ṅ-à-ukAČA *will see oneself* | |
| 100+S+400<br>g-ùkAča-nikUyA *he is looking at him*<br>200+S+400<br>ní-ukAča-nikUyA *will be looking*<br>100+300+S+400<br>ká?-à-ukAča-nikUyA *he is looking at himself*<br>200+300+S+400<br>ṅ-à-ukAča-nikUyA *will be looking at oneself* | 100+S+500<br>g-ùkAČA-nE *they saw him*<br>200+S+500<br>ní-ukAča-ne· *will see (plural subject)*<br>100+300+S+500<br>ká?-à-ukAČA-nE *they saw themselves*<br>200+300+S+500<br>ṅ-à-ukAča-ne· *will see themselves* | 100+S+600<br>g-ùkAča-nu· *if he sees him*<br>100+300+S+600<br>ká?-à-ukAča-nu· *if he sees himself* |

| | | |
|---|---|---|
| 100+S+400+500<br>g-ùkᴀča-niguya-sᴇ *they are looking at him* | 100+S+400+600<br>g-ùkᴀča-niguya-nu· *if he is looking at him* | 100+S+500+600<br>g-ùkᴀča-ne·-de *when they see him* |
| 200+S+400+500<br>ní-ukᴀča-niguya-sᴇ *will be looking (plural subject)* | | |
| 100+300+S+400+500<br>ká?-à-ukᴀča-niguya-sᴇ *they are looking at themselves* | 100+300+S+400+600<br>ká?-à-ukᴀča-niguya-nu· *if he is looking at himself* | 100+300+S+500+600<br>ká?-à-ukᴀča-ne·-de *when they see themselves* |
| 200+300+S+400+500<br>ǹ-à-ukᴀča-niguya-sᴇ *will be looking at themselves* | | |

| |
|---|
| 100+S+400+500+600<br>g-ùkᴀča-niguya-se·-de *when they are looking at him* |
| 100+300+S+400+500+600<br>ká?-à-ukᴀča-niguya-se·-de *when they are looking at themselves* |

Chart 3.—*Century Class Stem Sequences*

A few Type B intransitive verbs always occur with -ṅɪ in word-final position. This morpheme cannot be assigned a meaning function and does not fit in any of the classes of inflectional affixes:

| | |
|---|---|
| kə́·gaṅɪ | *it is red* |
| kə́·seṅɪ | *I am red* |

There is a tendency for words beginning in g-, k- or k̇- to develop by analogy a set of inflectional affixes even though the word may not originally have been a verb. This may be seen in the word gasî·kɪ *cacique* borrowed from the Spanish. The initial g- no longer behaves like a part of the stem but is identified with the third person prefix and may be replaced by other pronominal or future tense affixes:

| | |
|---|---|
| sesî·kɪ | *I am a cacique* |
| nesî·kɪ | *will be a cacique* |

Some words have an indicative and a dubitative form but never occur with the future tense prefix or any other inflectional affix:

| | |
|---|---|
| k̇ú·tí | *mountain* |
| č̇ú·tí | *there may be a mountain* |

The potentiality for occurring with a future tense prefix is taken as a necessary condition for membership in the verb class. *Mountain,* therefore, is not a verb, but is classified as an uninflected word which exhibits two alternate forms.

## VERB STEMS

Verbs are analyzed as consisting of a stem plus inflectional affixes of the various classes previously described. The stem itself is analyzed as consisting of two obligatory components, a thematic adjunct and a core, and may include a benefactive suffix as well. The combination of these elements to form verb stems is described in the section to follow. Certain verb cores, in turn, may be analyzed further. These will be described under "Verb Core Derivation."

### STEM FORMATION

The thematic adjunct (abbreviated TA) is an element of the verb occurring, in most cases, immediately preceding the core (i.e., it is the initial element of the verb stem). The verb zínàtᴀ *he bought it,* for example, may be dissected as follows:

| | | |
|---|---|---|
| z- | -í- | -nàtᴀ |
| | TA | core |
| pronominal prefix | stem | |

In those verbs in which the pronominal affix follows the core the thematic adjunct is the element immediately following the pronominal affix:

zù-k-ʊ (core+pronominal affix+TA) *he went*

The stem in such cases, as zù—ʊ in the above example, is discontinuous.

Thematic adjuncts occurring in transitive verbs are either *simple*, indicating singular object, or *expanded* to indicate dual or plural object. Simple thematic adjuncts in transitive verbs are most commonly single vowels, either short or long:

| | |
|---|---|
| g-ú-ni | *he knows him* |
| dʸ-ù-di | *you gave it to me* |
| ċ-í·-zúᴡᴀ | *I paid him* |

A few transitive verbs occur with vowel clusters as simple thematic adjuncts:

| | |
|---|---|
| ṩ-ài-kú·mi | *I brought it to you* |
| ṩ-âu-ˀʊ | *I gave it to you* |

A particular transitive verb ordinarily retains the same thematic adjunct throughout its primary paradigms (see Appendix 1). Frequently, however, there is a different thematic adjunct in the passive voice (see "Stem Variants").

To indicate dual or plural object, the thematic adjunct of transitive verbs is expanded according to a pattern that is regular but not analyzable in terms of additive morphemes. Chart 4 lists simple transitive thematic adjuncts together with their dual and plural expanded forms. With the simple thematic adjuncts are vowels or vowel clusters which result from a combination of the final vowel of a preceding prefix together with the thematic adjunct. This includes, for instance, -e- resulting from a combination of -i- plus -a- and -au- resulting from a combination of -a- and -u-. Only those vowels and vowel clusters are given which have actually been recorded in transitive verbs. This accounts for the omission from the chart of many vowels and vowel combinations that might be expected to occur.

Thematic adjuncts and their expansions are listed in the chart by types based on the forms which appear in the primary paradigms and in the passive voice respectively. Type u/a, for example, has reference to verbs which exhibit -u- as thematic adjunct in their primary paradigms and -a- in the passive voice. The expansion of these adjuncts involves a radical change in the accent pattern only in the case of those which in their simple form are short and level accented. These are grouped together in a separate section of the chart. In other verbs the accent of the simple thematic adjunct is retained on the final vowel or vowel cluster of the expanded forms, while the initial syllable receives a level accent. Vowel length occurring with a simple thematic adjunct likewise is retained on the final vowel of the expanded forms.

|  | Type | Simple | Dual Expanded | Plural Expanded |
|---|---|---|---|---|
| Short level accent | i/a | -í- | -à- | -áiẏà- |
|  |  | -á- | -à- | -áiẏà- |
|  |  | -ú- | -à- | -áiẏà- |
|  | u/a | -ú- | -û·ˀu- | -úwà- |
|  |  | -áu- | -â·ˀu- | -áuwà- |
|  |  | -íu- | -î·ˀu- | -íuwà- |
|  |  | -ȧ- | -áˀâ·ˀa- | -áˀáwà- |
| Long level, falling or breathy accent | a/a | -a- | -a·ˀa- | -aiẏa- |
|  |  | -e- | -e·ˀe- | -eiẏa- |
|  | ai/ai | -ai- | -a·ˀai- | -aiẏai- |
|  |  | -ei- | -e·ˀei- | -eiẏai- |
|  | au/au | -au- | -a·ˀau- | -aiẏau- |
|  |  | -eu- | -e·ˀeu- | -eiẏau- |
|  | i/i | -i- | -a·ˀai- | -aiẏa- |
|  |  | -ai- | -a·ˀai- | -aiẏa- |
|  |  | -ui- | -a·ˀai- | -aiẏa- |
|  | u/a | -u- | -u·ˀu- | -u·ẇa- |
|  |  | -au- | -a·ˀau- | -auẇa- |
|  |  | -iu- | -i·ẏu- | -iuẇa- |
|  |  | -a- | -a·ˀa- | -auẇa- |
|  | u/u | -u- | -a·ˀau- | -aiẇa- |
|  |  | -au- | -a·ˀau- | -aiẇa- |
|  |  | -iu- | -a·ˀau- | -aiẇa- |

Chart 4.—*Expansion of Thematic Adjuncts*

Examples of such expansion in the order that they occur in chart 4 are as follows:

| | | | | | |
|---|---|---|---|---|---|
| šídʸa | *you caught him* | şàdʸa | *you caught them two* | şáiy̓àdʸa | *you caught them* |
| ş̇ádʸa | *I caught you* | şàdʸa | *I caught you two* | şáiy̓àdʸa | *I caught you all* |
| č̇údʸa | *you caught me* | dʸàdʸa | *you caught us two* | dʸáiy̓àdʸa | *you caught us* |
| gúsuk̓ᴜᴄᴀ | *he kicked him* | gû·ˀusuk̓ᴜᴄᴀ | *he kicked them two* | gúwàsuk̓ᴜᴄᴀ | *he kicked them* |
| şáusuk̓ᴜᴄᴀ | *I kicked you* | şâ·ˀusuk̓ᴜᴄᴀ | *I kicked you two* | şáuwàsuk̓ᴜᴄᴀ | *I kicked you all* |
| síusuk̓ᴜᴄᴀ | *I kicked him* | sî·ˀusuk̓ᴜᴄᴀ | *I kicked them two* | síuwàsuk̓ᴜᴄᴀ | *I kicked them* |
| sk̓àsuk̓ᴜᴢaṅᴇ | *I was kicked* | sk̓áˀâ·ˀasuk̓ᴜᴢaṅᴇ | *we two were kicked* | sk̓áˀáwàsuk̓ᴜᴢaṅᴇ | *we were kicked* |
| şàkᴜ | *you bit him* | şá·ˀàkᴜ | *you bit them two* | şáiy̓àkᴜ | *you bit them* |
| sèkᴜ | *I bit him* | sé·ˀèkᴜ | *I bit them two* | séiy̓àkᴜ | *I bit them* |
| ş̇àikú·mi | *I brought it to you* | şá·ˀàikú·mi | *I brought it to you two* | şáiy̓àikú·mi | *I brought it to you all* |
| ċèikú·mi | *I brought it to him* | sé·ˀèikú·mi | *I brought it to them two* | séiy̓àikú·mi | *I brought it to them* |
| şâuˀᴜ | *I gave it to you* | şá·ˀâuˀᴜ | *I gave it to you two* | şáiy̓âuˀᴜ | *I gave it to you all* |
| ċêuˀᴜ | *I gave it to him* | sé·ˀêuˀᴜ | *I gave it to them two* | séiy̓âuˀᴜ | *I gave it to them* |
| ší·zúᴡᴀ | *you paid him* | şá·ˀáizúᴡᴀ | *you paid them two* | şáiy̓á·zúᴡᴀ | *you paid them* |
| şáizúᴡᴀ | *I paid you* | şá·ˀáizúᴡᴀ | *I paid you two* | şáiy̓á·zúᴡᴀ | *I paid you all* |
| č̇úizúᴡᴀ | *you paid me* | dʸá·ˀáizúᴡᴀ | *you paid us two* | dʸáiy̓á·zúᴡᴀ | *you paid us* |
| gú·k̓àiᴄᴀ | *he hit him* | gú·ˀú·k̓àiᴄᴀ | *he hit them two* | gú·w̓á·k̓àiᴄᴀ | *he hit them* |
| şáuk̓àiᴄᴀ | *I hit you* | şá·ˀáuk̓àiᴄᴀ | *I hit you two* | şáuw̓á·k̓àiᴄᴀ | *I hit you all* |
| síuk̓àiᴄᴀ | *I hit him* | sí·y̓ú·k̓àiᴄᴀ | *I hit them two* | síuw̓á·k̓àiᴄᴀ | *I hit them* |
| sk̓áˀá·k̓àizaṅᴇ | *I was hit* | sk̓áˀá·ˀá·k̓àizaṅᴇ | *we two were hit* | sk̓áˀáuw̓á·k̓àizaṅᴇ | *we were hit* |
| dʸùdi | *you gave it to me* | dʸá·ˀàudi | *you gave it to us two* | dʸáiw̓àdi | *you gave it to us* |
| ş̇àudi | *I gave it to you* | şá·ˀàudi | *I gave it to you two* | şáiw̓àdi | *I gave it to you all* |
| šìudi | *you gave it to him* | şá·ˀàudi | *you gave it to them two* | şáiw̓àdi | *you gave it to them* |

Thematic adjuncts occurring in intransitive verbs with singular subject are single vowels or vowel clusters:

| | |
|---|---|
| g-ú-yá | *he skinned it* |
| ṣ-â·-ni | *you walked* |
| ṡ-ái-natᴀ | *I cooked it* |
| ṡ-àu-tᴀ | *I killed it* |

In most cases the thematic adjunct remains the same in all singular forms of the verb. Two exceptions, however, should be noted. (1) Type B intransitive verbs which normally take -u or -ᴜ show a shift to -e or -ᴇ in certain forms (see also "Vowel Reduction") as:

| | |
|---|---|
| zùk-ᴜ | *he went* |
| zùs-ᴇ | *I went* |

(2) Intransitive verbs of classes 9–11 and 9–12 (see pp. 110 ff.) show a change from -au- to -u- in the second person hortative:

| | |
|---|---|
| ṩ-àu-tᴀ | *you killed it* |
| č̇-ù-tᴀ | *kill it* |

Intransitive verbs with dual or plural subject often have the same thematic adjunct as the singular form:

| | |
|---|---|
| z-í-kᴜpᴀᴡᴀ | *he chopped* |
| z-í-kᴜpawaṅɜ | *they two chopped* |
| z-í-kᴜpawaṅᴇ | *they chopped* |

In other verbs there are changes resembling the expansion of the thematic adjunct of transitive verbs:

| | |
|---|---|
| s-ú-tâ·ṅiçᴀ | *I worked* |
| s-úẇᴀ-tâ·niẓaṅᴇ | *we worked* |

There is, however, no regular pattern of expansion in intransitive as there is in transitive verbs. Stem changes involving the thematic adjunct are treated under "Stem Variants."

The benefactive suffix is analyzed as part of the stem rather than as an inflectional affix because its inclusion in a verb normally involves a change in the classification of the verb: verbs with this suffix occur with a distinctive set of pronominal allomorphs that differs, in most cases, from the set which occurs in the simpler forms. All verb stems with the benefactive suffix are Class D transitive stems (see p. 108). They may be formed, however, from stems that are either transitive or intransitive and which belong to any of the principal classes. There are five allomorphs of the benefactive suffix: -ni, -mi, -ṁi, -diṁi, and -wi. The occurrence of these allomorphs correlates with specific allomorphs of the plural subject suffix. Verbs which are pluralized by 502A or 502B in forms lacking Century Class 400 suffixes take the -ni allomorph of the benefactive suffix:

| | | | |
|---|---|---|---|
| ċínàtᴀ | *I bought it* | ṣàtɪšᴀ | *I talked to you* |
| sə́ẓánàdaṅᴇ | *we bought it* | ṣàtɪšᴀɴᴇ | *we talked to you* |
| ċíunàdani | *I bought it for him* | ṩàtɪšani | *I talked to him for you* |

Allomorph -mi correlates in a similar fashion with 502E and 502K; -ṁi, correlates with 502D; -diṁi with 502C; and -wi with 502G and 502H:

| | | | |
|---|---|---|---|
| súẇànᴇ | *I went hunting* | ċídʸa | *I caught it* |
| súẇawàneˀᴇ | *we went hunting* | ṡídʸaˀtᴀ | *we caught it* |
| ṩáwànemi | *I went hunting for you* | ṩáudʸaˀdiṁi | *I caught it for you* |
| ṡáudi | *I planted* | záˀá·ṫᴀ | *he opened it* |
| ṡáẇá·diṁᴇ | *we planted* | záˀá·ṫᴀᴡᴇ | *they opened it* |
| ċíudiṁi | *I planted for him* | ṩáˀá·ṫawi | *I opened it for you* |

Examples showing a correlation of benefactive suffixes with 502F, 502I, 502J, 502L, 502M, and 502N are lacking in the data. Positionally, the benefactive suffix occurs between suffixes of Century Class 400 and Century Class 500. In forms containing a suffix of Century Class 400 the stem is thus discontinuous:

ṩáuk̇àicɪta·ni (141B + TA + verb core + 401E + benefactive suffix, -ni)
*I am hitting him for you*

### STEM VARIANTS

Stem variants result primarily from changes in the thematic adjunct and from changes in the final syllable of the verb stem, although other syllables may occasionally be involved as well. Certain of these changes are irregular and must be indicated in a listing of stems. Others, however, may be predicted on the basis of previously described processes which show a certain degree of regularity. The latter result from specific morphophonemic processes, from the expansion of transitive verb thematic adjuncts and the change in the thematic adjunct of intransitive verbs of classes 9–11 and 9–12, ("Stem Formation"), and from the suffixation of affix 401E or 502L ("Inflectional Affixes").

Vowel reduction normally results in the fusing of the thematic adjunct with a preceding vowel. Stem variants will then show either a shift in, or a loss of, the initial (thematic adjunct) vowel, depending on how the prefix-stem cut is made:

| | |
|---|---|
| g-àkᴜ (g- + -àkᴜ) | *he bit him* |
| ṩ-àkᴜ or ṩà-kᴜ (ṩa- + -àkᴜ) | *I bit you* |
| s-èkᴜ or sè-kᴜ (si- + -àkᴜ) | *I bit him* |

The morphophonemic reduction of vowel plus semivowel sequences results in similar stem changes:

| | |
|---|---|
| g-úẇî·tᴇʏᴀ (g- + -úẇî·tᴇʏᴀ) | *he worshiped* |
| sí-ẇî·tᴇʏᴀ (si- + -úẇî·tᴇʏᴀ) | *I worshiped* |
| g-úišɪkᴜʏᴀ (g- + -úwíšɪkᴜʏᴀ) | *he scolded him* |
| sí-wíšɪkᴜʏᴀ (si- + -úwíšɪkᴜʏᴀ) | *I scolded him* |

Morphophonemic processes involved in suffixation, too, often result in regular stem changes:

| | |
|---|---|
| g-ùkᴀčᴀ (g- + -ùkᴀčᴀ) | *he saw him* |
| g-ùkᴀča-nikᴜyᴀ (g- + -ùkᴀčᴀ + -nikᴜyᴀ) | *he is looking at him* |
| g-u̇pᴇ (g- + -u̇pᴇ) | *he ate* |
| g-u̇beu-kᴜyᴀ (g- + -u̇pᴇ + -kᴜyᴀ) | *he is eating* |
| s-úẇî·c̣ᴀ (s- + -úẇî·c̣ᴀ) | *I made it* |
| s-úẇî·tɪ-tᴀ (s- + -úẇî·c̣ᴀ + -(i)tᴀ) | *I am making it* |

Stem variants may result from regular changes which do not involve morphophonemic processes. The most common of these is the expansion of the thematic adjunct to indicate dual or plural object of transitive verbs. This kind of change is regarded as stem change rather than inflection because (1) the changes are of such a nature that no additive morpheme can be isolated, and (2) it parallels in many ways the kind of irregular change which takes place in certain intransitive verb stems in the dual and plural as compared with the singular forms. The expansion of thematic adjuncts in transitive verbs has been described in "Stem Formation" and examples given.

The regular change from -au- to -u- in the second person hortative forms of Class 9–11 and 9–12 intransitive verbs likewise produces stem variants:

| | |
|---|---|
| ṡ-áudi | *I planted* |
| č̇-údi | *plant it* |

The change to -i or -ɪ of a stem-final -a or -ᴀ preceding allomorph -tᴀ of the continuative action suffix and before allomorph -yᴀ of the plural subject suffix was noted in "Inflectional Affixes":

| | |
|---|---|
| ċí·zúwᴀ (ċi- + -í·zúwᴀ) | *I paid him* |
| ċí·zúwi·-tᴀ (ċi- + -í·zúwᴀ + -tᴀ) | *I am paying him* |

Changes which are irregular and which must be indicated in stem listing are of the following types:

1. *Changes in intransitive verb stems in the dual and in the plural as compared to the singular.*—Dual and plural forms of intransitive verbs, except for a relatively few which exhibit stem suppletion, are clearly related to the singular forms. The changes in the stem, however, are highly irregular:

| | |
|---|---|
| g-úṁⱻ | *he left* |
| g-û·ṁⱻ | *they two left* |
| z-ê·ṁⱻ | *they left* |
| k-u̇pᴇ | *he ate* |
| g-â·ˀᴀbe | *they two ate* |
| g-â·ˀᴀpᴇ | *they ate* |
| k-útâ·ṅic̣ᴀ | *he worked* |
| g-útâ·ṅiẓa-ṅⱻ | *they two worked* |
| g-úẇᴀtâ·ṅiẓa-ṅᴇ | *they worked* |

Because of this irregularity, intransitive verb stems are listed separately for the singular, dual, and plural.

2. *Accentual changes and the alternation between voiced and voiceless vowels in verb stems of the same number.*—In some verbs the thematic adjunct alternates from a short accented vowel in most forms to a voiceless vowel in forms prefixed by pronominal morphemes of the shape CV́C-:

| | |
|---|---|
| ṡ́-étɪdʸᴀ | *my back* |
| gə́c̣-ᴀtɪdʸᴀ | *your back* |

Verbs of this type also may show a shift to a voiceless vowel in the verb core if the core is monosyllabic and normally contains a voiced vowel:

| | |
|---|---|
| ṡ́-ádʸá | *my animal* |
| gə́c̣-ᴀdʸᴀ | *your animal* |

Verb stems which exhibit this type of alternation are listed with the thematic adjunct accent in parentheses:

| | |
|---|---|
| -⁽ˊ⁾atɪdʸᴀ | *back* |
| -⁽ˊ⁾adʸá | *to possess an animal* |

A few verb stems have a distinctive form which occurs only following prefixes composed of a consonant plus -i-. This form of the stem is characterized by a breathy accent on the thematic adjunct and by a final voiceless vowel:

| | | | |
|---|---|---|---|
| sìdʸᴀ (si- + -ìdʸᴀ) | *I descended* | sìkᴀ (si- + -ìkᴀ) | *I looked* |
| gə́dʸa (g- + -ə́dʸa) | *he descended* | zígá (z- + -ígá) | *he looked* |

These stems are listed thus:

| | |
|---|---|
| -ígá (-ìkᴀ) | *to look* |

Some transitive verbs normally characterized by a breathy accent in the thematic adjunct take a level accent in those forms of the primary paradigms in which a vowel cluster results from prefixation:

| | |
|---|---|
| g-ùkᴀčᴀ | *he saw him* |
| sí-ukᴀčᴀ | *I saw him* |

Stems that exhibit this type of change are listed with the following notation:

| | | |
|---|---|---|
| -ùkᴀčᴀ | (-v́v-) | *to see* |

A few type B intransitive verbs show a shift from a breathy to a falling accent when the core is followed by -n-:

| | |
|---|---|
| zù-kᴜ | *he went* |
| zû·-ne | *will go* |

These are listed in the following manner:

| | |
|---|---|
| zù--ᴜ (zû·n-) | *to go* |

3. *Shifts in the thematic adjunct vowel of transitive verbs in the passive voice.*—Some verbs that normally occur with -u- as the thematic adjunct show a shift to -a- in the passive voice:

| | |
|---|---|
| sg-ú·k̓àicᴀ | *he hit me* |
| sk̓áˀ-á·k̓àizan̓ᴇ | *I was hit* |

This change cannot be predicted from the phonetic content of the stem nor from its class membership, and is indicated as follows in stem listings:

| | |
|---|---|
| -ú·/á·k̓àicᴀ | *to hit* |

4. *The change from a glottalized to a plain sonorant in the initial stem consonant.*—Stems which are based on cores normally beginning with a glottalized sonorant sometimes show a shift to a plain sonorant in forms prefixed by a glottalized consonant. Other verbs, however, retain the glottalized sonorant:

| | | | |
|---|---|---|---|
| ṣ-úẇànᴇ | *you hunted* | gəẓ-â·ẇɪ | *your child* |
| č̓-úwànᴇ | *hunt* | k̓-â·ẇɪ | *his child* |

Those stems which exhibit this type of change are indicated thus:

| | |
|---|---|
| -úẇ/wànᴇ | *to hunt* |

5. *The lengthening of a stem-final vowel.*—In "Voicing" it was noted that some vowels which are normally voiceless become voiced and long when followed by a suffix. This lengthening is characteristic of some, but not all, stem-final vowels:

| | | | |
|---|---|---|---|
| č̇í·zúwᴀ | *I paid him* | č̇ídʸáwᴀ | *I stabbed him* |
| ṧí·zúwa·ṅᴇ | *we paid him* | č̇ídʸáwan̓ᴇ | *we stabbed him* |

Vowels which undergo this type of lengthening are followed by a vowel length symbol in parentheses in stem listings:

| | |
|---|---|
| -ɪ́·zúwᴀ(·) | *to pay* |

6. *The introduction of a glottal stop after the stem-final vowel.*—Some verb stems are characterized in certain forms by the introduction of a glottal stop following the stem-final vowel. The glottal stop appears regularly, in forms without suffixes, in the negative mode and in the future tense:

| | |
|---|---|
| zídʸa | *he caught him* |
| zázi zídʸaˀ | *he didn't catch him* |
| ṅídʸaˀ | *will catch* |

In some of these verbs the glottal stop also appears in all forms containing suffixes, together with the rearticulation of the stem-final vowel if the suffix begins with a sonorant:

| | |
|---|---|
| zídɪ̂·ša | *he fed him* |
| zídɪ̂·šaˀ-tᴀ | *he is feeding him* |
| zídɪ̂·šaˀa-ṅᴇ | *they fed him* |

These verbs are listed thus:

| | |
|---|---|
| -ídî·ša(ˀ) | *to feed* |

Other verbs show the glottal stop in word-final position but not in forms containing a suffix:

| | |
|---|---|
| zí·bádʸu | *he awoke him* |
| ṅí·bádʸuˀ | *will awaken* |
| zí·bádʸᴜsⱻ | *he is awaking him* |

Verbs of this type are listed with the glottal stop in double parentheses:

| | |
|---|---|
| -í·bádʸu((ˀ)) | *to awaken* |

There is at least one verb in the data which contains a final glottal stop in the negative mode and future tense, and retains the glottal stop with vowel rearticulation when followed by a suffix beginning with a sonorant, but which shows a lengthening of the stem-final vowel and no glottal stop when followed by other suffixes:

| | | | |
|---|---|---|---|
| gùbe | *he told him* | gùbeˀe-ṅᴇ | *they told him* |
| zázi gùbeˀ | *he didn't tell him* | gùbe·-tᴀ | *he is telling him* |

This verb is listed as follows:

| | |
|---|---|
| -ùbe(·ˀ) | *to tell* |

7. *The voicing of a final vowel or vowel-consonant sequence.*—The future tense of some verbs is characterized by the voicing of certain segments which are voiceless in other forms. This usually involves vowel clusters or sequences of the type -kᴜʏᴀ:

| | | | |
|---|---|---|---|
| ċìkᴀɪ | *he lay down* | sə́dė̀kᴜʏᴀ | *I did it* |
| ṅìgai | *will lie down* | nə́dė̀guya | *will do* |

These stems are listed in this manner:

| | |
|---|---|
| -ìkᴀɪ (fut. -ìgai) | *to lie down* |
| -ė̀kᴜʏᴀ (fut. -ė̀guya) | *to do* |

8. *The retention of aspirated stops under conditions in which unaspirated stops normally appear.*—Stops which are aspirated preceding voiceless vowels normally become unaspirated if the vowel is voiced. A few stems and suffixes, however, retain aspirated stops in all environments:

| | |
|---|---|
| zíkᴜᴘᴀᴡᴀ | *he chopped* |
| zíkᴜpawaṅᴇ | *they chopped* |

Stops which remain aspirated before voiced vowels are underlined in the listing of stems:

| | |
|---|---|
| -íkᴜp̲ᴀᴡᴀ | *to chop* |

### VERB CORE DERIVATION

The verb core is the element which, together with the thematic adjunct, normally comprises the verb stem. The verb core may be a single morpheme and often consists of one or two syllables:

| | | | |
|---|---|---|---|
| -sṫi | *to give a liquid* | -ᴋᴀᴄ̌ᴀ | *to see* |
| -pᴇ | *to eat* | -tɪꜱ̌ᴀ | *to speak to* |
| cá·- | *to breathe* | -nàtᴀ | *to buy* |

Some two-syllable cores and most, if not all, polysyllabic cores show evidence of being derived from simpler forms. However, very few derivational affixes which are still productive can be identified. The majority of polysyllabic verb cores are suspected of being derived for one of the following reasons:

(1) They include sequences of phonemes which recur with great frequency in verb cores, although such sequences cannot be correlated with any common semantic feature. For example:

| | | |
|---|---|---|
| a. | -wA | in |
| | -ċAyAwA | *to be angry* |
| | -ẓá·čúwA | *to awaken* |
| | -kUpAwA | *to chop* |
| b. | -yA | in |
| | -ẇî·tEyA | *to worship* |
| | -yùcEyA | *to carry* |
| | -wáçAšAyA | *to stir* |
| c. | -ṁI | in |
| | -wiṫu·niṁI | *to care for* |
| | -disduwiṁI | *to be sticky* |
| | -stIdʸinaṁI | *to sweat* |
| d. | -kUyA | in |
| | -zaˀanikUyA | *to preach* |
| | -ṅikUyA | *to bathe* |
| | -tIkUyA | *to cry* |
| | -wíšIkUyA | *to scold* |

(2) They include sequences of phonemes which occur in two or more semantically related verb cores. For example:

| | | |
|---|---|---|
| a. | -sṫU | in |
| | -yaṁAsṫU | *to be hungry* |
| | -páníusṫU | *to be thirsty* |
| b. | -stA | in |
| | -suṁeˀestA | *to teach* |
| | -ċidʸUstA | *to ponder* |

(3) They include sequences of phonemes which, if eliminated from the core, would leave a remainder that would itself be a verb core semantically related to the longer form. For example.:

a. -cI in
-sč̇ú·cI *windpipe*; compare sč̇ú- *to swallow*
It also recurs in a number of semantically unrelated cores:
-sá·bacI *to pound*
-sgú·çUcI *to drool*

b. -çA in
-k̇ûiçA *man's sister*; compare -k̇ui *wife*
-dʸumiçA *to learn*; compare -dʸúmI *to remember*
Other cores in which it occurs include the following:
-tâ·ṅiçA *to work*
-wíčá·çA *to listen*

c. -cᴀ in
-ċáyucᴀ *to break*; compare ċáyú- *to be broken*
It also recurs in a great many semantically unrelated cores including the following:
-pé·rucᴀ *to lick*
-ċê·nacᴀ *to chew*
-ẏuċɪdʸi·cᴀ *to rest*

d. -tʊ in
-ṁetʊ *to freeze*; compare -ṁeˀᴇ *to be frozen* and hâ·ṁe· *ice*
-baˀtʊ *to sleep*; compare -baˀ *to be sleepy*

e. -ṫᴀ in
-be·ṫᴀ *to ask*; compare -be *to tell*

f. -da- in
-dáċə́ç̣ɜcᴀ *to cut*; compare -ċə́ç̣ɜcᴀ *to cut*

g. -wai- in
-wáič̇ᴀ *to be hot* (*liquid*); compare -č̇ᴀ *to be hot*
-wáistᴀyᴀ *to be cold* (*liquid*); compare -stᴀyᴀ *to be cold*

## VERB CLASSES

The primary division in verbs is between transitive and intransitive verbs. Transitive verbs occur with a full set of pronominal affixes (except Decade Class 180 and, in some cases, Decade Class 130) while most intransitive verbs occur with only those of Decade Classes 100, 110, and 120. Some intransitive verbs occur with affixes of Decade Class 140; others occur with Decade Class 180; but none occur with Decade Classes 130, 150, or 160. Certain verbs which are intransitive according to this inflectional definition must be translated by an English transitive expression with a third person object:

s̓àutᴀ *I killed it*

The transitive-intransitive dichotomy is thus based on structural and not semantic criteria.

### TRANSITIVE VERBS

Transitive verb stems are classified on the basis of their occurrence with specific allomorphs of inflectional affixes. The most important such classification is based on allomorphs of the pronominal prefixes. While the number of verb classes is considerable, this number is only a small fraction of what theoretically could result from all possible combinations of the many allomorphs of inflectional affixes. There are rather strict limitations on the freedom of distribution of specific allomorphs. Groups of allomorphs rather than individual allomorphs may be viewed as independent units in an examination of the combinations which may constitute a complete verb paradigm.

Allomorphs of Century Class 100 occurring with transitive verbs may be arranged in two sets of three partial paradigms. These are designated 1a, 2a, 3a, 1b, 2b, and 3b (chart 5). Each allomorph is listed by its phonemic shape and its reference number. In general,

| Partial paradigm | Person | | Mode | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Subj. | Obj. | Indicative | Negative | Dubitative | Hortative | Negative hortative | Future hortative |
| 1a | 1st | 2d | şa-<br>141A | şa-<br>142A | ẓa-<br>143A | ṣa-<br>144A | ṣa-<br>145A | ẓa-<br>146A |
| 2a | 2d | 1st | dʸu-<br>151A | dʸu-<br>152A | dʸu-<br>153A | gu-<br>154A | gu-<br>155A | dʸu-<br>156A |
| | 3d | 1st | sg-<br>161A | sdʸ-<br>162A | tə́ẓ-<br>163A | nə́ẓ-<br>164A | nə́ẓ-<br>165A | nə́ẓ-<br>166A |
| 3a | 3d | 2d | gə́ẓ-<br>171A | gə́ẓ-<br>172A | dʸə́ẓ-<br>173A | ẓ-<br>174A | sdʸ-<br>175A | dʸə́ẓ-<br>176A |
| | 1st | 3d | si-<br>101A | sg-<br>102A | ti-<br>103A | ka-<br>104A | ni-<br>105A | ni-<br>106A |
| | 2d | 3d | ṣ-<br>111A | ṣ-<br>112A | ç-<br>113A | p-<br>114A | sg-<br>115A | ç-<br>116A |
| | 3d | 3d | g-<br>121A | g-<br>122A | dʸ-<br>123A | pi-<br>124A | pi-<br>125A | pi-<br>126A |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1b | 1st | 2d | ṣ̓a-<br>141B | ṣ̓a-<br>142B | c̣̓a-<br>143B | ṣ̓a-<br>144B | ṣ̓a-<br>145B | c̣̓a-<br>146B |
| 2b | 2d | 1st | ču-<br>151B | ču-<br>152B | ču-<br>153B | ku-<br>154B | k̓u-<br>155B | č̓u-<br>156B |
| | 3d | 1st | sk̓u-<br>161B | sč̓-<br>162B | tə́di-<br>163B | nə́di-<br>164B | nə́di-<br>165B | nə́di-<br>166B |
| 3b | 3d | 2d | gə́di-<br>171B | gə́di-<br>172B | dʸídi-<br>173B | di-<br>174B | sč̓-<br>175B | dʸídi-<br>176B |
| | 1st | 3d | c̓i-<br>101B | sdʸi-<br>102B | t̓i-<br>103B | ka-<br>104B | n̓i-<br>105B | n̓i-<br>106B |
| | 2d | 3d | ši-<br>111B | ši-<br>112B | ci-<br>113B | pi-<br>114B | sdʸi-<br>115B | ci-<br>116B |
| | 3d | 3d | zi-<br>121B | zi-<br>122B | di-<br>123B | p̓i-<br>124B | p̓i-<br>125B | p̓i-<br>126B |

Chart 5.—*Transitive Verb Partial Paradigms*

the occurrence with a specific verb of one allomorph within a partial paradigm presupposes the potential occurrences of all other allomorphs of that partial paradigm with the same verb. For instance, if a verb occurs with allomorph 141A it may be predicted that the same verb will occur with 142A, 143A, 144A, 145A, and 146A; if it occurs with 151A it may be predicted that it also will occur with 152A, 153A, 161A, etc.

The combinations of three partial paradigms (1a or 1b with 2a or 2b and 3a or 3b) plus, in certain cases, allomorphs of Decade Class 130, form the primary paradigms of a transitive verb. The partial paradigms combine in four different ways resulting in four principal classes of transitive verbs:[5]

Class A verbs occur with partial paradigms 1a, 2a, and 3a.
Class B verbs occur with partial paradigms 1b, 2b, and 3a.
Class C verbs occur with partial paradigms 1a, 2b, and 3b.
Class D verbs occur with partial paradigms 1b, 2a, and 3b.

Class A transitive verbs occur with the following allomorphs of Decade Class 130:

| | | | | | |
|---|---|---|---|---|---|
| zi- | zi- | di- | ṗi- | ṗi- | ṗi- |
| 131A | 132A | 133A | 134 | 135 | 136 |

Those of Class B occur with the following:

| | | | | | |
|---|---|---|---|---|---|
| ċ- | ċ- | ṫ- | ṗi- | ṗi- | ṗi- |
| 131B | 132B | 133B | 134 | 135 | 136 |

Verbs of Classes C and D do not occur with prefixes of Decade Class 130.

The primary paradigms of all four classes of transitive verbs are given in full in Appendix 1, page 143. It should be noted that this fourfold classification applies only to verbs with singular object. All transitive verbs take A-allomorphs of the pronominal prefixes in forms indicating dual or plural object:

| | |
|---|---|
| ší·zúwᴀ (111B + stem) | *you paid him* |
| ṣá·ˀáizúwᴀ (111A + stem) | *you paid them two* |
| ṣáiẏá·zúwᴀ (111A + stem) | *you paid them* |

A further subclassification of transitive verbs may be made on the basis of their occurrence with specific allomorphs of the inflectional suffixes. At least eight subclasses may be defined in terms of occurrence with allomorphs of suffixes 401, 501, and 502. Verbs of Subclass 1 take allomorphs 401E, 501A, and 502A:

| | |
|---|---|
| síuk̓àicɪ-tᴀ | *I am hitting him* |
| ṡíuk̓àiza-ṅɜ | *we two hit him* |
| ṡíuk̓àiza-ṅᴇ | *we hit him* |

---

[5] There is one transitive verb in the data which does not conform to any of the four major classes: -ȃuˀᴜ *to give a long or flat object.* In general it takes allomorphs of partial paradigms 1b, 2b, and 3b. However, the -i- is omitted from the prefix in all forms except those expressing first person subject with third person object in the indicative, dubitative, negative hortative, and future hortative modes: ċȇuˀᴜ (ċi- + -ȃuˀᴜ) *I gave it to him,* but zȃuˀᴜ (z- + -ȃuˀᴜ) *he gave it to him.*

Verbs of Subclass 2 occur with the B-allomorphs of these three suffixes (401B, 501B, and 502B):

| | |
|---|---|
| síukAča-nikUyA | *I am looking at him* |
| ṧíukAča-nətI | *we two saw him* |
| ṧíukAČA-DE | *we saw him* |

Verbs of Subclass 3 take the C-allomorphs (401C, 501C, and 502C):

| | |
|---|---|
| č̇ídʸaˀ-tIkUyA | *I am catching him* |
| ṧídʸaˀ-dʸI | *we two caught him* |
| ṧídʸaˀ-tA | *we caught him* |

Subclass 4 transitive verbs occur with allomorphs 401F, 501D and 502D:

| | |
|---|---|
| č̇í·bádʸU-SƎ | *I am awakening him* |
| ṧí·bádʸu-ṁƎ | *we two awakened him* |
| ṧí·bádʸu-ṁE | *we awakened him* |

The remainder of the subclasses are poorly represented in the data, each being attested by a single verb. As far as the data show, verbs of Subclasses 5, 6, and 7 do not occur with the continuative action suffix (401). Those of Subclass 5 occur with allomorphs 501F and 502F in the dual and plural:

| | |
|---|---|
| ṧíuni-ṁAṢUtI | *we two know him* |
| ṧíuni-ṁASA | *we know him* |

Verbs of Subclass 6 take allomorphs 501G and 502I:

| | |
|---|---|
| ṧíyû·k̇amI-ṢUtI | *we two waited for him* |
| ṧíyû·k̇amI-ŠE | *we waited for him* |

Those of Subclass 7 occur with allomorphs 501H and 502G:

| | |
|---|---|
| ṧíẏêiṅA-pƎ | *we two found him* |
| ṧíẏêiṅA-WA | *we found him* |

Subclass 8 transitive verbs occur with allomorphs 401A, 501H, and 502H:

| | |
|---|---|
| síube·ṫau-kUyA | *I am asking him* |
| ṧíube·ṫA-pƎ | *we two asked him* |
| ṧíube·ṫA-WE | *we asked him* |

Transitive verbs furthermore occur with a different allomorph of suffix 502 if suffix 401 is also present than they do in the simpler forms. Subclass 1 verbs take allomorph 502L in plural continuative forms:

| | |
|---|---|
| ṧíuk̇àicItI-yA | *we are hitting him* |

Compare:

| | |
|---|---|
| ṧíuk̇àiza-ṅE | *we hit him* |

Verbs of other subclasses occur with allomorph 502M in the plural continuative:

| | |
|---|---|
| ṧíukAčaniguya-SE | *we are looking at him* |

Compare:

| | |
|---|---|
| ṧíukAČA-nE | *we saw him* |

The distribution of specific allomorphs of suffix 402 correlates with the subclasses outlined above. Examples are lacking for the occurrence of this suffix with verbs of several of the subclasses. So far as the data go, however, allomorphs of 402 correlate with homophonous allomorphs of 502:

| | |
|---|---|
| síukAČA-nE | *I came to see him* |
| č̇í·zúwa··-ṅE | *I came to pay him* |

Compare:

| | |
|---|---|
| ṧíukAČA-nE | *we saw him* |
| ṧí·zúwa··-ṅE | *we paid him* |

Transitive verb subclasses crosscut the major classes previously described. The data contain examples, for instance, of Class A verbs which belong to Subclasses 1, 3, 4, and 5. A single designation (A1, A3, A4, A5, etc.) may be used to indicate both the major class and the subclass to which the transitive verb belongs.

### INTRANSITIVE VERBS

Like transitive verbs, intransitive verbs are classified on the basis of the particular pronominal allomorphs with which they occur. There are, however, many more intransitive than transitive verb classes. Furthermore, intransitive verbs in general may be transitivized by the addition of the benefactive suffix. This means, in effect, that these intransitive verbs belong not only to their own intransitive class, but also are linked to a transitive class.

Major classes of intransitive verbs are designated by a code composed, in most cases, of two numbers (e.g., 1–3). The first number identifies the allomorphs of the third person affixes (121–126) as well as the first person negative (102) and the second person negative hortative (115) affixes with which the verb occurs. The code numbers with their corresponding sets of allomorphs are tabulated below. Indicated in the tabulation are allomorphs of affixes 121, 123, 124 and 102. Allomorphs of 122 are identical in phonetic content to those of 121, while the same is true of 115 in relation to 102, and of 125 and 126 in relation to 124.

| | | | | |
|---|---|---|---|---|
| 1. | 121A | 123A | 124G | 102A |
| | g- | d$^{y}$- | pí$^{?}$- | sg- |
| 2. | 121A | 123A | 124C | 102A |
| | g- | d$^{y}$- | p- | sg- |
| 3. | 121B | 123B | 124A | 102B |
| | zi- | di- | pi- | sd$^{y}$i- |
| 4. | 121C | 123C | 124G | 102C |
| | k- | č- | pí$^{?}$- | sk- |

| | | | | |
|---|---|---|---|---|
| 5. | 121C | 123C | 124C | 102C |
| | k- | č- | p- | sk- |
| 6. | 121D | 123D | 124B | 102D |
| | k̇- | č̇- | ṗi- | sk̇- |
| 7. | 121D | 123D | 124D | 102D |
| | k̇- | č̇- | ṗ- | sk̇- |
| 8. | 121E | 123E | 124E | 102E |
| | ga- | dʸa- | pa- | sga- |
| 9. | 121F | 123F | 124F | 102F |
| | káʔ- | čáʔ- | páʔ- | skáʔ- |
| 10. | 121G | 123G | 124G | 102G |
| | z- | d- | píʔ- | sdʸ- |
| 11. | 121G | 123G | 124C | 102G |
| | z- | d- | p- | sdʸ- |
| 12. | 121H | 123H | 124B | 102H |
| | ċ- | ṫ- | ṗi- | sč̇- |
| 13. | 121I | 123I | 124B | 102I |
| | ċi- | ṫi- | ṗi- | sč̇i- |
| 14. | 121J | 123J | 124G | 102J |
| | c– | t– | píʔ- | sč- |

Some intransitive verbs, because of semantic limitations, occur only in the third person. These are identified by a single code number in accordance with the above scheme. The data include examples of verbs of this type belonging to Classes 1, 4, 6, 9, 10, 13, and 14:

| | |
|---|---|
| gágə́çɜtɪ | *flower, it blossomed* (Class 1) |
| kàčᴀ | *it rained* (Class 4) |
| k̇ápᴀšɪ | *it is dark* (Class 6) |
| káʔáumucᴀ | *it thundered* (Class 9) |
| zèstᴀyᴀ | *it is breezy* (Class 10) |
| č̇íya·tɪ | *it is sharp* (Class 13) |
| cídʸᴜ | *it cost* (Class 14) |

The second number of the code identifies allomorphs of the first and second person affixes, with the exception of the first person negative and the second person negative hortative morphemes. Tabulated below are the allomorphs of affixes 101, 103, 104, 106, 111, 113 and 114 corresponding to each code number. Allomorphs of 105 are phonetically identical to those of 104; allomorphs of 112 correlate with those of 111; and allomorphs of 116 with those of 113.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. | 101A | 103A | 104A | 106A | 111A | 113A | 114A |
| | si- | ti- | ka- | ni- | ṣ- | ç- | p- |
| 2. | 101A | 103A | 104C | 106A | 111A | 113A | 114D |
| | si- | ti- | k- | ni- | ṣ- | ç- | č̇- |
| 3. | 101A | 103A | 104A | 106A | 111A | 113A | 114H |
| | si- | ti- | ka- | ni- | ṣ- | ç- | ʔ- |
| 4. | 101A | 103A | 104A | 106A | 111C | 113C | 114B |
| | si- | ti- | ka- | ni- | š- | c- | pi- |
| 5. | 101A | 103A | 104C | 106A | 111C | 113C | 114C |
| | si- | ti- | k- | ni- | š- | c- | ṫ- |
| 6. | 101A | 103A | 104A | 106A | 111C | 113C | 114H |
| | si- | ti- | ka- | ni- | š- | c- | ʔ- |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7. | 101B<br>c̓i- | 103B<br>t̓i- | 104B<br>k̓a- | 106B<br>n̓i- | 111C<br>š- | 113C<br>c- | 114B<br>pi- |
| 8. | 101C<br>s- | 103C<br>t- | 104C<br>k- | 106C<br>n- | 111A<br>ṣ- | 113A<br>ç- | 114D<br>č̓- |
| 9. | 101C<br>s- | 103C<br>t- | 104G<br>n- | 106C<br>n- | 111A<br>ṣ- | 113A<br>ç- | 114D<br>č̓- |
| 10. | 101C<br>s- | 103C<br>t- | 104M<br>š- | 106C<br>n- | 111A<br>ṣ- | 113A<br>ç- | 114D<br>č̓- |
| 11. | 101D<br>s̓- | 103D<br>táʔ- | 104D<br>káʔ- | 106D<br>n̓- | 111D<br>ṣ̓- | 113D<br>çáʔ- | 114D<br>č̓- |
| 12. | 101D<br>s̓- | 103D<br>táʔ- | 104N<br>š̓- | 106D<br>n̓- | 111D<br>ṣ̓- | 113D<br>çáʔ- | 114D<br>č̓- |
| 13. | 101C<br>s- | 103C<br>t- | 104C<br>k- | 106C<br>n- | 111E<br>gə́ẓ- | 113E<br>dʸə́ẓ- | 114E<br>ẓ- |
| 14. | 101D<br>s̓- | 103D<br>táʔ | 104D<br>káʔ | 106D<br>n̓- | 111E<br>gə́ẓ- | 113E<br>dʸə́ẓ- | 114E<br>ẓ- |
| 15. | 101D<br>s̓- | 103D<br>táʔ- | 104H<br>n̓- | 106D<br>n̓- | 111E<br>gə́ẓ- | 113E<br>dʸə́ẓ- | 114E<br>ẓ- |
| 16. | 101E<br>s̓i- | 103H<br>tíʔ- | 104C<br>k- | 106B<br>n̓i- | 111A<br>ṣ- | 113A<br>ç- | 114A<br>p- |
| 17. | 101E<br>s̓i- | 103H<br>tíʔ- | 104F<br>n̓i- | 106B<br>n̓i- | 111A<br>ṣ- | 113A<br>ç- | 114A<br>p- |
| 18. | 101E<br>s̓i- | 103H<br>tíʔ- | 104Q<br>st̓i- | 106B<br>n̓i- | 111A<br>ṣ- | 113A<br>ç- | 114A<br>p- |
| 19. | 101E<br>s̓i- | 103H<br>tíʔ- | 104F<br>n̓i- | 106B<br>n̓i- | 111C<br>š- | 113C<br>c- | 114B<br>pi- |
| 20. | 101E<br>s̓i- | 103H<br>tíʔ- | 104Q<br>st̓i- | 106B<br>n̓i- | 111C<br>š- | 113C<br>c- | 114B<br>pi- |
| 21. | 101F<br>síʔ- | 103H<br>tíʔ- | 104I<br>níʔ- | 106E<br>níʔ- | 111C<br>š- | 113C<br>c- | 114B<br>pi- |
| 22. | 101F<br>síʔ- | 103H<br>tíʔ- | 104P<br>stíʔ- | 106E<br>níʔ- | 111C<br>š- | 113C<br>c- | 114B<br>pi- |
| 23. | 101G<br>sə́ẓ- | 103E<br>tə́ẓ- | 104J<br>nə́ẓ- | 106F<br>nə́ẓ- | 111E<br>gə́ẓ- | 113E<br>dʸə́ẓ- | 114E<br>ẓ- |
| 24. | 101G<br>sə́ẓ- | 103E<br>tə́ẓ- | 104M<br>š- | 106F<br>nə́ẓ- | 111E<br>gə́ẓ- | 113E<br>dʸə́ẓ- | 114E<br>ẓ- |
| 25. | 101H<br>sə́d- | 103F<br>tə́d- | 104K<br>nə́d- | 106G<br>nə́d- | 111F<br>gə́d- | 113F<br>dʸə́d- | 114F<br>d- |
| 26. | 101H<br>sə́d- | 103F<br>tə́d- | 104O<br>st- | 106G<br>nə́d- | 111F<br>gə́d- | 113F<br>dʸíd- | 114F<br>d- |
| 27. | 101I<br>sg- | 103E<br>tə́ẓ- | 104J<br>nə́ẓ- | 106F<br>nə́ẓ- | 111E<br>gə́ẓ- | 113E<br>dʸə́ẓ- | 114E<br>ẓ- |
| 28. | 101J<br>sk̓u- | 103G<br>tə́di- | 104L<br>nə́di- | 106H<br>nə́di- | 111G<br>gə́di- | 113G<br>dʸídi- | 114G<br>di- |

Various combinations of the two code numbers identify the major intransitive verb classes. At least 31 such classes are attested by the data.[6] Classes 1–1, 1–3, 1–16, 4–3, 4–5, 5–2, 5–8, 6–3, 7–13,

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[6] A few intransitive verbs have been noted which occur with allomorphs 101E s̓i-, 111E gə́ẓ- and 121D k- in the indicative mode: s̓ə̂·na *my eye*, gə́ẓâ·na *your eye*, k̓â·na *his eye*. Full paradigms (including the hortative modes) have never been obtained for these verbs. Since they do not fit any of the major classes outlined here they are listed in the vocabulary as unclassified.

7–15, 8–14, 9–11, 10–6, 10–7, 12–27, 13–28 and 14–4 are apparently confined to singular verb stems. Classes 1–17, 2–23, 5–9, 10–21 and 14–19 are found only among plural verb stems, and Classes 1–18, 2–24, 5–10, 9–12, 10–22, 11–26, and 14–20 among dual verb stems. Class 11–25 occurs in both the singular and the plural, and Class 3–27 in all three numbers.

There is a certain degree of correlation between classes characteristic of the three numbers. Verbs, for example, which belong to Class 1–17 in the plural number normally belong to Class 1–18 in the dual and Class 1–1 in the singular. Other common correlations are as follows:

| Singular | Dual | Plural |
|---|---|---|
| 5–8 | 5–10 | 5–9 |
| 9–11 | 9–12 | 5–9 |
| 10–7 | 10–22 | 10–21 |
| 14–4 | 14–20 | 14–19 |

Furthermore, dual Class 2–24 is commonly linked with plural Classes 2–23 or 11–25. These combinations, however, occur with a variety of singular classes.

Class membership does not necessarily imply the potential occurrence of the full set of affixes represented by the code numbers. Some verbs, notably those referring to body parts, are seldom if ever found in the hortative modes and only rarely in certain other forms. The code numbers, nevertheless, indicate at least the indicative affixes with which the verb occurs.

Class 7–15 verbs are unique in that they often occur, not only with the allomorphs indicated by the code numbers, but also with allomorphs of Decade Class 140. Specifically, verbs of this class take allomorphs 141B ş̣a-, 142B ş̣a-, 143B ç̣a-, 144B ş̣a-, 145B ş̣a- and 146B ç̣a-. In this context, affixes of Decade Class 140 may express either first person subject with second person object or the reverse:

ş̣áuk̓î·ni *you are my friend* (*or*) *I am your friend*

Verbs belonging to Class 7–15 are, in general, those which refer to kinship or similar relationships, or which indicate possession.

Type B intransitive verbs fall into the general scheme of classification, although many of the classes are not represented in these verbs. Furthermore, in Type B verbs ending in a voiceless vowel there is no contrast between aspirated and unaspirated pronominal affixes. Aspiration in such cases is ignored in stem classification. For example, zùkᴜ *he went*, occurs with an aspirated pronominal affix, -k-. The stem, however, belongs to Class 1–1, a class normally taking g- in the third person indicative. This classification is consistent with the occurrence of other affixes such as -dʸ- in the third person dubitative: zùdʸᴜ *maybe he went.*

The occurrence of affix 181 is rather restricted and apparently not related to class membership except that allomorphs of this affix correlate with those of affix 121. The data indicate a correlation of allomorph 181A with 121A or 121E, 181B with 121D, and 181D with 121G:

| | |
|---|---|
| sg-â·ṁᴀ (181A + stem) | *one's houses* |
| g-â·ṁᴀ (121A or 121E + stem) | *his house* |
| sk̇-âuk̇ui (181B + stem) | *one's wives* |
| k̇-âuk̇ui (121D + stem) | *his wife* |
| sč̇-î·k̇ᴀ (181D + stem) | *one's mouths* |
| z-î·k̇ᴀ (121G + stem) | *his mouth* |

Allomorph 181C occurs in the data only in sčâuʔᴜ *a crowd.* An apparently related form is gâuʔᴜ *he dwells,* although the correlation is not certain.

Intransitive verbs may be subclassified, as are transitive verbs, on the basis of their occurrence with specific allomorphs of the inflectional suffixes. Since intransitive verbs are listed and classified separately for the three numbers, affixes of Century Class 500 are not involved, and such a subclassification would be based solely on allomorphs of suffix 401. Rather than designate intransitive subclasses by a code, it is simpler to indicate directly the allomorph of suffix 401 with which the verbs occur.

Paradigms illustrating the major intransitive verb classes are to be found in Appendix 1, page 143.

### VERBAL AUXILIARIES

Verbal auxiliaries are a class of words which always are inflected to indicate person and sometimes are inflected to indicate other grammatical categories as well. They are distinguished formally from verbs in that they are never inflected to indicate future tense. Semantically and functionally they differ from verbs in that alone they cannot constitute a predicate.

The function of the verbal auxiliary is to indicate the person of the subject or the subject and object of an action when this is not otherwise indicated. The most common occurrence of verbal auxiliaries is in conjunction with verbs in the future tense. In such cases the verb does not include a pronominal affix:

| | |
|---|---|
| núpᴇ si | (future tense prefix, n- + verb stem followed by auxiliary, si) *I will eat* |
| ṅí·zúwᴀ si | *I will pay him* |

Compare:

| | |
|---|---|
| súpᴇ | (first person prefix, s- + verb stem) *I ate* |
| ċí·zúwᴀ | *I paid him* |

The verbal auxiliary may also occur following a verb containing an allomorph of affix 124 (third person subject with third person object in the hortative mode). The result is a hortative expression with an added pronominal element:

píˀínàtA si (hortative prefix, 124G píˀ-, + verb stem followed by auxiliary, si) *I want him to buy it*

Compare:

píˀínàtA *let him buy it*

Occasionally an uninflected word will function as a predicate, in which case a verbal auxiliary indicates the subject and object:

té·né si *I like him*

The word té·né fulfills the function ordinarily performed by a verb, both semantically (it may be translated *to like*) and syntactically (it fills a predicate slot) although it is never inflected.

The basic forms of the verbal auxiliaries are listed in chart 6. As in the case of pronominal prefixes occurring with transitive verbs, verbal auxiliaries appear with seven principal subject-object combinations. In addition, there is a form expressing fourth person subject with third person object, distinctive forms for the passive voice, and a form expressing indefinite subject. Unlike the set of verb affixes, however, only three modes are recognized. A comparison with charts 1 and 2 reveals that verbal auxiliaries are based on a set of prefixes identical in form to certain allomorphs of the affixes of Century Class 100. Verbal auxiliaries actually have nothing that can be regarded as a stem unless it is the vowel -u (or -i in a few cases). This vowel, however, is comparable to the thematic adjunct of verbs. The -ṁA occurring in many forms may best be regarded as a suffix, although it cannot be assigned a meaning.

| Subject | Object | Indicative | Negative | Dubitative |
|---|---|---|---|---|
| 1st | 3d | si | sgu | ti |
| 2d | 3d | ṣu | ṣu | çu |
| 3d | 3d | gu | gu | dʸu |
| 4th | 3d | zíuṁA | zíuṁA | díuṁA |
| 1st | 2d | ṣáuṁA | ṣáuṁA | ẓáuṁA |
| 2d | 1st | dʸúṁA | dʸúṁA | dʸúṁA |
| 3d | 1st | sgúṁA | sdʸúṁA | túẓúṁA |
| 3d | 2d | gúẓúṁA | gúẓúṁA | dʸúẓúṁA |
| Passive voice | | | | |
| 1st person | | sk̇áˀáṁASA | sč̇áˀáṁASA | ṫéˀéṁASA |
| 2d person | | šáˀáṁASA | šáˀáṁASA | cáˀáṁASA |
| 3d person | | ċáˀáṁASA | ċáˀáṁASA | ṫáˀáṁASA |
| Indefinite subject | | sgúṅE | | |

CHART 6.—*Basic Forms of Verbal Auxiliaries*

Transitive verbs occur with the full set of verbal auxiliaries:

| | |
|---|---|
| níukAČA si | *I will see him* |
| zázi níukAČA sgu | *I won't see him* |
| níukAČA ti | *maybe I will see him* |
| níukAČA ṣu | *you will see him* |
| zázi níukAČA ṣu | *you won't see him* |
| níukAČA çu | *maybe you will see him* |
| níukAČA gu | *he will see him* |
| zázi níukAČA gu | *he won't see him* |
| níukAČA dʸu | *maybe he will see him* |
| níukAČA zíuṁA | *he (fourth person) will see him* |
| zázi níukAČA zíuṁA | *he won't see him* |
| níukAČA díuṁA | *maybe he will see him* |
| níukAČA ṣáuúṁA | *I will see you* |
| zázi níukAČA ṣáuṁA | *I won't see you* |
| níukAČA ẓáuṁA | *maybe I will see you* |
| níukAČA dʸúṁA | *you will see me* |
| zázi níukAČA dʸúṁA | *you won't see me* |
| níukAČA dʸúṁA | *maybe you will see me* |
| níukAČA sgúṁA | *he will see me* |
| zázi níukAČA sdʸúṁA | *he won't see me* |
| níukAČA túẓúṁA | *maybe he will see me* |
| néˀèkAčane· sk̇áˀáṁASA | *I will be seen* |
| zázi néˀèkAčane· sč̇áˀáṁASA | *I won't be seen* |
| néˀèkAčane· ṫéˀéṁASA | *maybe I will be seen* |
| néˀèkAčane· šáˀáṁASA | *you will be seen* |
| zázi néˀèkAčane· šáˀáṁASA | *you won't be seen* |
| néˀèkAčane· cáˀáṁASA | *maybe you will be seen* |
| néˀèkAčane· ċáˀáṁASA | *he will be seen* |
| zázi néˀèkAčane· ċáˀáṁASA | *he won't be seen* |
| néˀèkAčane· ṫáˀáṁASA | *maybe he will be seen* |

Most intransitive verbs occur with those verbal auxiliaries listed in the first three rows of chart 6:

| | |
|---|---|
| núpE si | *I will eat* |
| zázi núpE sgu | *I won't eat* |
| núpE ti | *maybe I will eat* |
| núpE ṣu | *you will eat* |
| zázi núpE ṣu | *you won't eat* |
| núpE çu | *maybe you will eat* |
| núpE gu | *he will eat* |
| zázi núpe gu | *he won't eat* |
| núpE dʸu | *maybe he will eat* |

A few intransitive verbs (those which are prefixed by sgu- or sk̇u- in the first person indicative) occur with the verbal auxiliaries which normally express third person subject with first object, third person subject with second person object, and fourth person subject with third person object:

| | |
|---|---|
| ṅìgai sgúṁA | *I will lie down* |
| zázi ṅìgai sdʸúṁA | *I won't lie down* |

| | |
|---|---|
| ṅìgai túẓúṁᴀ | *maybe I will lie down* |
| ṅìgai gúẓúṁᴀ | *you will lie down* |
| zázi ṅìgai gúẓúṁᴀ | *you won't lie down* |
| ṅìgai dʸúẓúṁᴀ | *maybe you will lie down* |
| ṅìgai zíuṁᴀ | *he will lie down* |
| zázi ṅìgai zíuṁᴀ | *he won't lie down* |
| ṅìgai díuṁᴀ | *maybe he will lie down* |

In addition to their basic forms, verbal auxiliaries may be inflected to indicate dual or plural subject and/or object. Those forms indicating dual or plural subject, in general, are constructed from the basic forms by the addition of a suffix. Dual subject is expressed by the addition of either the suffix - ˀᴜ, with concomitant lengthening of the preceding vowel, to basic forms which terminate in -u, or the suffix -ṅⱻ to forms which terminate in -ṁᴀ:

| | |
|---|---|
| nə́ẓâ·ˀᴀbeˀ gú·ˀᴜ | *they two will eat* |
| ṅí·zúwa·ṅⱻ ṣáuṁaṅⱻ | *we two will pay you* |

Note that dual subject is indicated in both the verb and the auxiliary. Compare:

| | |
|---|---|
| nu̇pᴇ gu | *he will eat* |
| ṅí·zúᴡᴀ ṣáuṁᴀ | *I will pay you* |

Plural subject is expressed by the addition of the suffix -ꜱᴀ, together with the development of a glottal accent on the preceding syllable in forms lacking the -ṁᴀ suffix:

| | |
|---|---|
| nə́ẓâ·ˀᴀᴘᴇ gu̇ꜱᴀ | *they will eat* |
| ṅí·zúwa·ṅe· ṣáuṁᴀꜱᴀ | *we will pay you* |

Some dual and plural verbal auxiliaries are constructed not from the basic form, but from distinctive dual/plural forms. The following are those which differ from the basic forms:

1. First person subject with third person object indicative:

súẓú-, as in nə́ẓâ·ˀᴀbeˀ súẓú·ˀᴜ *we two will eat*

2. First person subject with third person object dubitative:

túẓú-, as in nə́ẓâ·ˀᴀbeˀ túẓú·ˀᴜ *maybe we two will eat*

3. Second person subject with third person object indicative and negative:

gúẓú-, as in nə́ẓâ·ˀᴀbeˀ gúẓú·ˀᴜ *you two will eat*

4. Second person subject with third person object dubitative:

dʸúẓú-, as in nə́ẓâ·ˀᴀbeˀ dʸúẓú·ˀᴜ *maybe you two will eat*

Those verbal auxiliaries which terminate in -ṁᴀ may be inflected to indicate dual or plural object. This involves a change similar to the expansion of thematic adjuncts in verbs plus, in the case of plural object, the addition of -ẓu-. The following indicates the forms of the auxiliaries expressing singular, dual, and plural object:

| *singular* | *dual* | *plural* |
|---|---|---|
| -úṁA | -ú·ʔúṁA | -ú·ẇáẓúṁA |
| -áuṁA | -á·ʔáuṁA | -áuẇáẓúṁA |
| -íuṁA | -í·ẏúṁA | -íuẇáẓúṁA |

These forms are illustrated in the following examples:

| | |
|---|---|
| ṅí·zúwA dʸúṁA | *you will pay me* |
| ṅé·ʔéizúwA dʸú·ʔúṁA | *you will pay us two* |
| ṅéiẏázúwA dʸú·ẇáẓúṁA | *you will pay us* |
| ṅí·zúwA ṣáuṁA | *I will pay you* |
| ṅé·ʔéizúwA ṣá·ʔáuṁA | *I will pay you two* |
| ṅéiẏázúwA ṣáuẇáẓúṁA | *I will pay you all* |
| níukAČA zíuṁA | *he (fourth person) will see him* |
| ní·ẏúkAČA zí·ẏúṁA | *he will see them two* |
| níuẇákAČA zíuẇáẓúṁA | *he will see them* |

In addition to being inflected for person and number, verbal auxiliaries may occur with one of three condition suffixes. These are -ṅE, corresponding to the verbal suffix 601A; -de, corresponding to suffix 601B; and -nu·, corresponding to suffix 602:

| | |
|---|---|
| níukAČA sí-ṅE | *when I will see him* |
| ṅí·zúwa·ṅe· gúsa·-de | *when they will pay him* |
| ṅìgai gúẓúṁa-nu· | *if you will lie down* |

### UNINFLECTED WORDS

Included in the major class of uninflected words are those which express a wide variety of functions and exhibit a considerable number of derivational formations. A division of these words into function classes will be outlined in the section to follow, although a full description of syntactic function will be reserved for the chapter on syntax. Subclasses based on derivational formations will be described under "Derivation."

Uninflected words belong to one of the following function classes depending on their grammatical function:

*Referentials.*—All uninflected words, with the exception of pronouns, that may alone fill a subject or an object slot are referentials. These are, in general, nounlike words such as names of beings, things, and places.

*Pronouns.*—This is a class of rather limited membership comparable to English pronouns. The most commonly occurring members of this class are:

| | | | |
|---|---|---|---|
| hínʊ | *I, we* | we | *that one (inobviate)* |
| híṣʊ | *you* | ṁí·ga | *another one* |
| du | *this one* | ʔískA | *one* |
| he | *that one* | hau | *someone* |

*Attributives.*—Included in this class are a variety of adjective and adverb-like words. They may modify a referential, a pronoun, or a verb:

| | |
|---|---|
| ráwá· díyᴀ | *good dog* |
| hínᴜ ráwá· | *I am good* |
| ráwá· sí·baˀtᴜ | *I slept well* |

*Temporals.*—This class is made up of words which specify the relative or the absolute time of an action. Some of the more common temporals are as follows:

| | | | |
|---|---|---|---|
| súwá | *yesterday* | há·ẇíná | *right away* |
| híẇá | *today* | mâ·nu· | *a long time* |
| čámá | *tomorrow* | hám̓a· | *long ago* |
| ná·nu | *next day* | dʸáwá | *early* |
| ṣumí | *already* | cé·yá | *first* |

Also included are names of days, seasons, or the time of day. Many of these, however, are Spanish loanwords.

*Prepositions.*—Included in this class are a number of words which specify the location and/or direction of an action with respect to the speaker or to the actor. Among the more common prepositions are the following:

| | |
|---|---|
| dúk̓é· | *that way (near and away from the speaker)* |
| dúẇé· | *this way (near and toward the speaker)* |
| yúk̓é· | *that way (at a distance and away from the speaker)* |
| yúk̓ᴜ | *yonder, away* |
| diˀ | *right here* |
| yúsí | *from afar* |

*Directionals.*—This class comprises a rather limited number of commonly occurring words such as:

| | |
|---|---|
| dʸi | *up* |
| ṅə | *down* |
| si | *back here* |
| sa | *back (to previous location)* |

Also included are the points of the compass which occur with great frequency in native text.

*Interrogatives.*—Included in this class is the interrogative particle ˀa which, occurring at the beginning of a sentence, makes it a question. Also included are:

| | | | |
|---|---|---|---|
| zi | *what?* | há·di | *where? (location)* |
| háidí | *which one?* | hai | *where? (destination)* |
| hau | *who?* | hâiẇé· | *from where?* |
| háik̓ᴜ | *when?* | háik̓uma· | *what direction?* |

*Modals.*—This class includes a number of words which fix the mode of a following verb. Negative, negative hortative, and future hortative modes are obligatorily marked by such words:

| | |
|---|---|
| zázi | *not (negative mode)* |
| bâ·mí· | *don't (negative hortative mode)* |
| ba | *future hortative mode marker* |

In addition, dubitative mode is sometimes marked by k̇áucɪgái *maybe* and hortative mode by the hortatory exclamation, há·ṅé.

*Connectives.*—This is a class of very limited membership including gu *and*, ʔe *and*, and ʔésgəskᴜ *but*.

*Narrative particles.*—This class contains a few short words, ṣu, ʔe, ʔai, ʔeu, and du, which occur in various combinations with very high frequency in narrative text. They cannot be translated except in a general way as *and then*.

*Exclamations.*—Included in this class are a variety of exclamations such as:

| | | | |
|---|---|---|---|
| ha· | *yes* | hiṅá | *O.K.* |
| za | *no* | mə· | *look!* |
| me· | *don't* | | |

Most uninflected words are not amenable to internal structural analysis. There are, however, a number of subclasses, largely of quite limited membership, which exhibit specific types of derivational formations. These subclasses will be described below.

*Nominalized verbs.*—There are three general types of referentials which are derived from verbs by the omission of all verb prefixes and the addition of a nominalizing suffix.

The first type, which principally includes certain body parts, is based on the verb core; i.e., the thematic adjunct is excluded. The nominalizer in such words is regularly -ni. The following examples show first the verb form (translatable into English possessed body parts) followed by the nominalized form:

| | | | |
|---|---|---|---|
| gánásgái | *his head* | násgáini | *head* |
| gáẏú·spɪ | *his shoulder* | ẏú·sbini | *shoulder* |
| séẇî·šɪ | *my nose* | ẇíšî·ni | *nose* |

The second type of nominalized verb also includes body parts primarily and is based on the verb stem (which includes the thematic adjunct) preceded by h-. The nominalizer in these words is either -ni or -nani:

| | | | |
|---|---|---|---|
| ṣásdi | *your foot* | hásdiʔini | *foot* |
| ṣá·múčᴜ | *your toe* | há·múčuni | *toe* |
| šáʔáč̇ᴀ | *your tooth* | háʔáč̇anani | *tooth* |

The third type of nominalized verb includes a wide variety of action words and is based on the verb core preceded by ʔú- or ʔú·-. The nominalizer in these words is most commonly -ṅɪ, but may be any one of several suffixes:

| | | | |
|---|---|---|---|
| ċíkᴜᴘᴀᴡᴀ | *I chopped* | ʔúgupáwaṅɪ | *ax* |
| súgúyᴀ | *I sat down* | ʔúgúyáṅɪ | *seat* |
| síube | *I told him* | ʔú·bé·tá·ṅɪ | *story, news* |
| súpᴇ | *I ate* | ʔúbéwí | *food* |
| súbáyᴀ | *I built a fire* | ʔú·báyáṅɪ | *fireplace* |

*Numerals.*—Keresan numerals are based on a decimal system. Cardinal numbers 1 through 10 are unanalyzable, although the terms for 7, 8, and 9 are polysyllabic and may be derived forms. The term for *seven*, for instance, includes a sequence of phonemes similar to those in the term for *four*.

| | | | |
|---|---|---|---|
| ʔískA | *one* | sč̓ísA | *six* |
| dʸû·mí· | *two* | m̓àidʸana | *seven* |
| čémI | *three* | gúk̓úmišI | *eight* |
| dʸâ·na | *four* | máyuk̓U | *nine* |
| tâ·m̓A | *five* | k̓ácI | *ten* |

Numbers 11 through 19 are designated by the word for *ten* followed by the word for *one*, *two*, *three*, etc.:

| | |
|---|---|
| k̓ácI ʔískA | *eleven* |
| k̓ácI dʸu· | *twelve* (note the omission of -mí· here and in derived forms) |
| k̓ácI čémI | *thirteen* |

The addition of the suffix -wa or -ya to the terms for cardinal numbers 1 through 10 results in forms that occur both in the designations for 20, 30, 40, etc. and, in other contexts, as ordinal numbers. The suffix -ya occurs following the terms for two and three, while -wa is suffixed to the remainder of the number terms:

| | |
|---|---|
| dʸû·ya | *twice, second* |
| dʸû·ya k̓ácI | *twenty* |
| čémiya | *three times, third* |
| čémiya k̓ácI | *thirty* |
| dʸâ·nawa | *four times, fourth* |
| dʸâ·nawa k̓ácI | *forty* |

*References to pueblos and their inhabitants.*—Place names are sometimes derived from the term designating an inhabitant of that place, while in other cases the reverse is true. The former type of derivation involves the addition of the suffix -zé:

| | | | |
|---|---|---|---|
| t̓î·w̓A | *a Tiwa Indian* | t̓í·w̓á·zé | *a Tiwa Pueblo* |
| hé·mišI | *a person from Jemez* | hé·miší·zé | *Jemez Pueblo* |
| sə̂·ni | *a person from Zuni* | sə́·nízé | *Zuni Pueblo* |

The addition of the suffix -m̓E to a place name indicates an inhabitant of that place:

| | | | |
|---|---|---|---|
| dámáyá | *Santa Ana Pueblo* | dámáyâ·m̓E | *a person from Santa Ana* |
| dʸî·wi· | *Santo Domingo Pueblo* | dʸî·wi·m̓E | *a person from Santo Domingo* |

*Diminutives and augmentatives.*—The prefix rə́·- occurs in a large number of words indicating smallness:

| | |
|---|---|
| rə́·skíšI | *little* |
| rə́·k̓á·pAšI | *thin* |
| rə́·k̓á·šIkA | *narrow* |
| rə́·k̓áčI | *shallow* |
| rə́·cíč̓á | *a small person* |

The prefix ṁé·-, on the other hand, occurs with words expressing largeness:

| | |
|---|---|
| ṁé·zíčɪ | *big* |
| ṁé·k̓á·pᴀšɪ | *thick* |
| ṁé·k̓á·ṫɪkᴀ | *wide (something rigid)* |
| ṁé·k̓áċɪ | *deep* |
| ṁé·ċíyᴀ | *wide (something like cloth)* |
| ṁé·cíč̇á | *a tall person* |

*Derived prepositions.*—Many prepositions are derived from a combination of two morphemes. In these words dú- expresses nearness and yú- distance. Among the second elements, -k̓é· expresses motion away from the speaker, -ẇé· motion toward the speaker, -si a return, and -ˀai a fixed location:

| | |
|---|---|
| dúk̓é· | *that way (near and away from the speaker)* |
| dúẇé· | *this way (near and toward the speaker)* |
| yúk̓é· | *that way (at a distance and away from the speaker)* |
| yúẇé· | *this way (at a distance and toward the speaker)* |
| yúsí | *back from afar* |
| yúˀái | *there (located at a distance)* |

*Points of the compass.*—Several types of derived forms are based on the points of the compass, dʸídʸᴀ *north*, bə *west*, ku *south*, and ha· *east.* Motion toward the cardinal points of the compass is expressed by the following derived forms:

| | |
|---|---|
| dʸídʸámí | *toward the north* |
| bə́námí | *toward the west* |
| kúwámí | *toward the south* |
| há·námí | *toward the east* |

Motion from the cardinal points is likewise expressed by derived forms:

| | |
|---|---|
| há·ni | *from the east* |
| bə́ni | *from the west* |

Terms for northeast, northwest, southeast, and southwest result from a combination of modified forms of the terms for the cardinal points:

| | |
|---|---|
| dʸídiyabə́ | *northwest* |
| kúyabə́ | *southwest* |

Less frequently occurring forms derived from the terms for the points of the compass include those designating the east or the west side of the river (the Rio Grande) and those designating the four corners of the pueblo world:

| | |
|---|---|
| bə́nísdé | *the west side* |
| há·šuk̓ᴜ | *Santa Fe* (literally *east corner*) |

*Interrogatives.*—A large majority of interrogatives begin with ha-, suggesting that this is a derivational morpheme:

| | |
|---|---|
| hau | *who?* |
| hai | *where? (destination)* |
| há·di | *where? (location)* |
| hâiẇé· | *from where?* |
| háik̓uma· | *what direction?* |
| háik̓ᴜ | *when?* |
| háidí | *which one?* |
| háċᴜ | *how many?* |

## CLITICS

Clitics are a class of morphemes which do not effect morphophonemic voicing of a previous vowel as do suffixes (see "Voicing") but which, on the basis of distributional evidence, are not treated as free words (see "Units of Analysis"). Their position, then, is intermediate between that of an affix and a free word.

In terms of function there are four kinds of clitics, all of which occur as postclitics:

1. Pluralizing clitics occur following a limited number of referentials and verbs which function as subject or object. The most commonly occurring of these clitics is -dʸé·mí:

| | |
|---|---|
| k̓â·ẇɪ-dʸé·mí | *his children* |
| k̓a bíuna-dʸé·mí | *his servants* |

2. Locative-instrumental clitics occur following words which function as subject or object and include the morphemes -di, -dik̓ᴀ, -ši, and -si:

| | |
|---|---|
| mé·sᴀ-di | *on the table* |
| hínᴜ-dik̓ᴀ | *by me (through my instrumentality)* |
| gawâ·yu-ši | *by horseback* |
| gâ·ṁᴀ-si | *in his house* |

3. The nominalizer, -šé, is often attached to verbs which function as the subject or object of a clause:

| | |
|---|---|
| gáwínᴜska·tɪ-šé | *his two hearts* |

4. The clitics -ṣanu and -dʸanu (often contracted to -ṣau and -dʸau with nasalized vowels) occur following referentials which refer to living beings or following kinship terms (verbs) which function as subject or object. They occur rather frequently in narrative text recounting happenings of the distant past. The clitic -ṣanu occurs in ordinary narrative while -dʸanu carries a dubitative connotation:

| | |
|---|---|
| k̓âuk̓ui-ṣanu | *his wife* |
| k̓ádʸúmɜ-dʸanu | *his brother (reported to be)* |

Both pluralizing and narrative past tense clitics may occur in the same word. In such cases the past tense clitic always follows the pluralizing clitic:

| | |
|---|---|
| č̇â·ẇɪ-dʸé·mí-ṣanu | *his children* |

## SYNTAX

In "Morphology," words were described and classified on the basis of their internal structure. The emphasis in this section is on the grammatical function of words and phrases and the sequential arrangement of functional units. The word-class categories of the previous section are abandoned except in describing the kinds of words which may fill a function slot. This approach is adopted for the reason that there is in Santa Ana Keresan a lack of correlation between structural classes and function classes. Words which structurally are verbs, for instance, may have not only a verblike function but may have a nounlike function as ṡâ·ṁᴀ in the following example:

| | | | | |
|---|---|---|---|---|
| yúk̓é· | ṡâ·ṁᴀ | ˀe sa | zùsᴇ | *I am going home* |
| that way | my home | back | I go | |

### DEFINITION OF SYNTACTIC UNITS

Syntactic structure will be analyzed in terms of *function slots.* The term is used here to mean a position within the clause or larger syntactic unit which is characterized by:

1. A more or less fixed location in relation to other function slots. This does not imply an absolutely rigid sequential ordering of elements within the clause, but rather a relatively narrow limit to the kinds of sequences which are admissible.

2. A uniform grammatical function assignable to the slot together with the elements which may fill that slot. These grammatical functions (e.g., subject, object, predicate) will be discussed in detail on pp. 126 ff.

3. The potentiality of being filled by a single word. This criterion defines the lower limit of a function unit. Any position within the clause that is always filled by more than one word is not a single function slot.

4. The potentiality of being filled by a continuous sequence of words. A function slot, therefore, may be filled alternatively by a single word or by a sequence of words that are functionally equivalent to a single word. Such a sequence of words constitutes a *phrase.* Two or more non-contiguous positions within a clause which are filled by words or phrases having the same or similar grammatical function will be treated as separate slots rather than a single discontinuous slot.

The usual definition of a clause as a sequence of words containing a subject and predicate needs to be modified somewhat for the purposes of describing Santa Ana syntactic structure. The term *clause* will be understood to refer to a syntactic unit which includes a verb functioning as a predicate as well as to certain other relatively infrequently occurring types of units to be described below. A *predicate clause* in its minimal form consists of a single verb. There need not be an expressed subject other than the pronominal marker incorporated in the verb. Expanded forms of the predicate clause may contain an expressed subject and/or object as well as various other elements. Certain kinds of word sequences which do not include a verb functioning as predicate are treated as special types of clauses. These word sequences lend themselves to description as clauses comparable to predicate clauses because: (1) they are units with a more or less fixed structure and may be described in terms of function slots in the same manner as predicate clauses; (2) they possess a semantic content comparable to that of predicate clauses and, although not containing a predicate, are usually best translated by full English sentences; (3) they correlate closely with phonological units in the same manner as predicate clauses which, as with all clauses, tend to be set off by pauses in a connected text; and (4) their length and distribution in the text is such that their incorporation into contiguous predicate clauses often would result in unwieldy units. These special clauses are of three types: prepositional clauses, interrogative clauses, and ʔeu clauses, all of which will be described under "Nonpredicate Clauses."

The term *sentence* will be used much in its traditional sense to refer to a word or group of words which expresses an independent utterance, not part of any larger syntactic construction. A sentence may be a single independent clause, or it may consist of two or more clauses, one of which is an independent clause.

### MAJOR FUNCTION SLOTS AND THEIR FILLERS

Nine major function slots are identified within Santa Ana Keresan clauses. Each function slot, assigned an uppercase letter for easy reference, is described in the sections to follow.

In the description of the elements which may fill a function slot the occurrence of narrative particles are ignored. These particles occur with very high frequency in narrative text but are not considered to be an essential part of the syntactic structure. Although they contribute to the sense of continuity of a narrative and are roughly equivalent to English "And then . . . ," their omission in no way changes the basic structure and meaning of the utterance. The narrative particles, ṣu, ʔe, ʔeu, ʔai, and du, occur either singly or in various combinations. The more commonly occurring combinations are:

ṣu ʔe
ṣu ʔe ṣu
ṣu du
ṣu ʔe du
ʔe ṣu
ʔeu ṣu
ʔeu ṣu ʔe
ʔai ṣu
ʔai ṣu ʔe

Longer combinations made up of two or more of the above sometimes occur:

ṣu ˀe ˀai ṣu
ṣu ˀe ṣu ˀeu ṣu
etc.

When the informant is searching for words he often fills in with a rather long series of narrative particles which occur, most commonly, at the beginning of a clause:

ṣu ˀe ṣu dʸi dígâ·nikᴜyᴀ čėcɪ hiɢâ·ntɪ č̇ádʸá·še
*Then the giant's eagle, too, looked up.*

Roughly half of the clauses in the text are introduced by a narrative particle or combination of particles. Narrative particles occur less commonly, although with considerable frequency, between function slots within a clause:

ṣu ˀe dísí ku ṣu ˀe ṣu dʸáˀáiy̓ᴜ
*Then they flew southward.*

In the analysis of clause structure, narrative particles are assigned, where possible, to the initial position within the function slot. The above clause, for example, is analyzed as consisting of two function slots with the division occurring between ku and ṣu.

Narrative particles occur occasionally in non-initial position within a function slot. This may be true in certain function slots, such as the D slot (see p.132), which sometimes includes two or more elements with intervening narrative particles:

| D slot | | | |
|---|---|---|---|
| ṣu ˀe ṣu | dúẇé· | ṣu si | č̇â·ničᴀdʸᴀyᴀ |
| | this way | back | he was walking |

*Then he was walking back.*

### PREDICATE SLOT (P)

The grammatical function of a predicate slot with its filler is that normally associated with the term "verb." Among the more common types of concepts which may be expressed by this unit are the following:

| | |
|---|---|
| Action: sk̓àkᴜ | *he bit me* |
| Perception: sgùkᴀᴄ̌ᴀ | *he saw me* |
| State of being: ċíyaṁasṫᴜ | *I am hungry* |
| Relationship: k̓a | *it is his* |

The predicate slot is normally filled by a single verb. It may comprise the entire utterance (as in the above examples) or may be part of a larger construction:

| | | P | | | |
|---|---|---|---|---|---|
| ṣu ˀe | ˀáisí yúké· | dʸáˀáiy̓ᴜ | yúˀái | há·di | čú·tí |
| | there that way | they flew | there | where | mountain |

*Then they flew away to the mountains.*

A verb phrase rather than a single verb may fill the predicate slot, although this construction is statistically much less frequent. Four types of modifying elements may occur with a verb in a verb phase.

1. A qualifying word may occur either preceding or following the verb:

P
ṣu ˀáisí ha· nú·yú· k̓â·ni
there east alone he walked
*Then he walked eastward alone.*

P
ˀe ṣu ˀe ṣu čáˀàizi čèɕɪ
he went too
to bed
*Then he went to bed, too.*

2. The particle ˀeu may precede or follow the verb. This particle, which cannot be adequately translated into English, gives additional emphasis to a particular word or phrase:

P
ṣu ˀe ˀai hauˀ dʸá·ˀáċɪ ˀeu
near they arrived
*Then they came near.*

P
ˀeu sgúċípᴀ
*I need him.*

3. The verb may be preceded by an uninflected word which functions semantically as the principal carrier of meaning:

P
ṣumí há·k̓ʊ dʸáwinẓaṅɪ ˀeu čâukui-ṣanu
already ready she made his wife
*His wife had things already prepared.*

4. Certain verbs are preceded in most of their occurrences by characteristic particles which have no close semantic equivalent in English. These include ˀe, which precedes most forms of the verbs meaning *to go* and *to say*, and guiˀ, which precedes the verb *to do:*

P
ṣu ˀe ˀeu dʸá·mí ˀe č̓áza
eagle he said
*And then the eagle said,*

P
ṣu ˀe yúké· kú·tí ˀe zùpe·
that way mountain go
*Go away to the mountains!*

P
zi guiˀ gə́dėkʊyᴀ
what you are doing
*What are you doing?*

Predicate slots may be subdivided on the basis of whether or not the verb that fills the slot incorporates a pronominal marker indicating the person of the subject or of the subject and object. P1 slots, illustrated by all of the above examples, are filled by verbs in the non-future tense and incorporate pronominal markers. P2 slots are filled by future tense verbs which do not incorporate pronominal markers:

P2
nədéˀèyᴜ dísí ku súẓú·ˀᴜ há·di hiɢâ·ntɪ dʸâ·ṁᴀ
will go there south we where giant his house
*We will go south to the giant's house.*

AUXILIARY SLOT (A)

The occurrence of a P2 slot presupposes the presence in the same clause of an A slot filled by a verbal auxiliary (as súẓú·ˀᴜ *we*, in the example above). Verbal auxiliaries comprise both a structural class and a function class. The A slot is always filled by a single verbal auxiliary and performs the function of indicating the person of the subject or subject and object when this is not included in the verb itself. The A slot in general immediately follows the P slot:

| | | P | A |
|---|---|---|---|
| háik̇ᴜ dúẇé· | si | zû·ne | ṣu |
| when this way | back | will go | you |

*When will you come back?*

The occasional occurrence of other elements between the P and A slots prevents treating the verb plus its auxiliary as a verb phrase filling a simple slot.

SUBJECT SLOT (S)

The grammatical function of a subject slot with its filler is to indicate the subject of the verb in the predicate slot. This unit is not obligatory to a complete clause, as the person and number of the subject is indicated in the verb itself or in the verb together with its auxiliary. The filling of the subject slot either adds redundancy or else indicates the subject with more specificity. The subject slot may be filled by any one of the following elements.

*Pronouns.*—Included in this category are the first person pronoun, hínᴜ, the second person pronoun, híṣᴜ, and various third person pronouns such as ˀískᴀ *one*, du *this one*, he *that one*, hau *someone* and ˀísgawa *both of them:*

S P
ṣu ˀe ˀísgawa ˀai ṣu ˀe ṣu čȧdʸȧdʸɪ
both they fought
*Then the two of them fought.*

*Verbs.*—The most common type of verbs filling a subject slot are those indicating inalienably possessed objects (e.g., kinship terms and terms referring to body parts):

$\overbrace{\text{ˀe ṣu ˀe ṣu k̓áṅȧisdʸᴜ}}^{S}$ $\overbrace{\text{ˀe dʸéiṅet̓ᴀ}}^{P}$
his father he said
*Then his father said.*

*Referentials.*—These are, in general, nounlike words and the most commonly occurring fillers of the S slot.

ˀeu ˀáisí dʸi $\overbrace{\text{dʸá·mí}}^{S}$ $\overbrace{\text{ṣu ˀe čúgúyᴀ}}^{P}$
there up eagle he sat
*Then the eagle perched there.*

*Phrases based on the above elements.*—These are of the five general types given below.

1. Two or more words linked in possessive relationship:

$\overbrace{\text{ṣu ˀe ṣu č̓écɪ díyû·k̓ᴀᴍɪ}}^{P}$ $\overbrace{\text{gasî·kɪ č̓âuk̓ui-ṣanu}}^{S}$
also she waited king his wife
*The king's wife was waiting, too.*

$\overbrace{\text{k̓a háẓánɪ}}^{S}$ dʸi $\overbrace{\text{gáˀᴀṣúné}}^{P}$
his hair up it stood
*His hair stood up.*

$\overbrace{\text{hiɢâ·ntɪ č̓ádʸá·še dʸá·mí}}^{S}$ $\overbrace{\text{ṣu ˀe dʸú·sč̓ècᴀ}}^{P}$
giant his eagle he cried out
*The giant's eagle cried out.*

2. Two or more words linked in coordinate relationship:

díˀái $\overbrace{\text{dʸá·ˀâuˀᴜ}}^{P}$ $\overbrace{\text{háç̣ɜze·za gu č̓âuk̓ui-ṣanu}}^{S}$
there they lived man and his wife
*A man and his wife lived there.*

3. A combination of two or more pronouns or a combination of one or two pronouns with a referential or a verb:

$\overbrace{\text{ṣu ˀe ˀeu ˀai ˀískᴀ hau}}^{S}$ $\overbrace{\text{čáˀáutɪsɜ}}^{P}$
one someone he was planting
*There was someone planting.*

$\overbrace{\text{zi háidí gané·ru}}^{S}$ $\overbrace{\text{ṣu dʸúẇásč̓ècᴀ}}^{P}$
thing which sheep they bleated
*There were some sheep bleating.*

4. A verb or a referential with an attributive:

P S
ʔai ṫa dʸȧ̀kᴜ ríkᴜꜱɪ háçⱻᴄᴇ
thus he was rich man
*Once there was a rich man.*

5. A pronoun, verb, referential or phrase of one of the above types preceded and/or followed by ʔeu and/or čėcɪ:

P S
ṣu ʔe ṣu dʸùkᴀᴄ̌ᴀ ʔeu mû·k̇aiçᴀ
he saw him mountain lion
*Then the mountain lion saw him.*

S P
ṣu ʔe ʔeu sandiyâ·kᴜ čėcɪ ṣu yúkᴜ ṅə čúgúyanu·
St. James also away down he sat
*Then St. James dismounted, too.*

Clauses with compound subjects (i.e., two or more words in coordinate relationship) sometimes have two S slots with the subject split between the two:

S P S
ʔe háẇái ʙúiyasɪ zéʔé gu gawâ·yu gu mú·la
there oxen they are and horses and mules
*There are oxen, horses, and mules.*

### OBJECT SLOT (O)

An object slot with its filler indicates the object of the action expressed by the verb in the predicate slot. Like the subject slot, this is a nonobligatory element which adds redundancy or specificity. The same types of words or phrases may fill the object slot as the subject slot:

*Pronouns:*

P O
ʔeu ṣáẏêiba·tᴇ híṣᴜ
I look for you you
*I am looking for you.*

*Verbs:*

O P
ṣu ʔe ṣu ʔeu ṣu k̇â·ẇɪ-dʸé·mí ṣu dʸú·ẇàbéucᴀ
his children he called them
*Then he called his children.*

*Referentials:*

P O
ṣu ʔe čáʔàudanu· mû·k̇aiçᴀ
he killed it mountain lion
*Then he killed the mountain lion.*

*Phrases:*

1. Two or more words in possessive relationship:

| S | O | P |
|---|---|---|
| ṣu ˀe sandiyâ·kᴜ | ḱámȧkᴇ gasî·kɪ | ṫíwak̇uic̣ᴀ |
| St. James | his daughter king | he married |

*Then St. James married the king's daughter.*

2. Two or more words in coordinate relationship:

|  | P | O |
|---|---|---|
| há·di ˀégu | ˀeu ṣú·ẇàkᴀčᴀɴᴇ | gawiyá·ra wá·gašɪ |
| where then | you saw them | horses cattle |

*Where, then, did you see the horses and cattle?*

3. Combination of pronoun plus pronoun, verb or referential:

| O | P | A |
|---|---|---|
| du má·čᴜ | ˀeu néẏaẓəcᴇ | si |
| this mule | will choose | I |

*I will choose this mule.*

4. Combination of verb or referential plus attributive:

| O | P |
|---|---|
| ṣu ˀe ṣu ˀeu gášé gawâ·yu | ˀeu ṣu ˀe ˀe díwiẓa·ni-dʸanu |
| white horse | he saddled him |

*Then he saddled the white horse.*

5. Any of the above elements in combination with ˀeu or čecɪ:

| P | O |
|---|---|
| ṣu ˀe ˀai ṫáˀámudʸᴜᴢaṅᴇ | ˀeu du hiɢâ·ntɪ |
| he was killed | this giant |

*Then the giant was killed.*

When both the subject and the object slots in a clause are filled the two are distinguished by relative order (see "Predicate Clauses"). When one but not the other is filled, the context determines whether it is an object or a subject slot. A clause may occasionally have two object slots:

|  | O | P | O |
|---|---|---|---|
| ˀa zázi ˀai há·di | gawiyá·ra | dʸú·ẇàkᴀčᴀɴᴇ | gu wá·gašɪ |
| question not somewhere | horses | you saw them | and cattle |

*Haven't you seen some horses and cattle somewhere?*

The two object slots may be filled by a split compound object as in the example above, or they may be filled by a direct and an indirect object respectively:

|  | O | P | O |
|---|---|---|---|
| ṣu ˀe ṣu ˀáisí | sai zi | ṫáˀáwiya·ˀaniˀtᴀ | ˀeu sandiyâ·kᴜ |
| there | all thing | was left to him | St. James |

*Then everything was left to St. James.*

### DIRECTIONAL-LOCATIONAL SLOT (D)

A directional-locational slot with its filler specifies the direction taken by an action and/or its location either in an absolute sense or in relation to the speaker. The D slot may be filled by one of the following elements.

*A preposition:*

D P
ˀe ṣu ˀe háẇ́é· č̇â·ni
this way he came
*Then he advanced.*

*A directional:*

D P
ˀe ṣu ˀe dʸi déˀèyᴜ
up they went
*Then they went up.*

*A referential which includes a locative clitic:*

P D
ṣu ˀe díẏ́áṫɪsiwisdʸanu· gá·ru-di
he hitched them wagon to
*Then he hitched them to the wagon.*

*A phrase belonging to one of the following general types:*

1. Two prepositions:

D P
yúk̓é· háẇ́é· dígâ·nikᴜʏᴀ
that way this way he was looking
*He was looking this way and that.*

2. Two directionals:

D P
ṣu ˀe sa dʸi čúgúyanu·
back up he sat
*Then he sat up again.*

3. A combination of one or more prepositions with one or more directionals:

D P
ṣu ˀe yúsí ṅə zùdʸᴜ
from there down he went
*Then he went back down.*

D P
dúk̓é· ku ṅə ˀeu sê·ničᴀdʸᴀʏᴀ
that way south down I am going
*I am going on down south.*

4. A preposition plus a referential:

| D | P |
|---|---|
| şu ˀe yúk̓é· k̓ú·tí | ˀe zȕpe· |
| that way mountain | go |

*Go away to the mountains!*

5. A verb phrase:

| D | P |
|---|---|
| s̓étɪdʸᴀ ˀai dʸi | č̓úgúyᴀ |
| my back up | sit |

*Sit up on my back.*

Most clauses occurring with a D slot contain only one such slot. Occasionally, however, a clause occurs with two D slots, one preceding and the other following the P slot:

| D | P | D |
|---|---|---|
| şu ˀai hauˀ dʸi | şúgúyanu· | mé·ꜱᴀ-di |
| near up | when you sit | table at |

*When you sit up at the table,*

### TIME SLOT (T)

The grammatical function of a time slot with its filler is to specify the relative time of an action. This slot is usually filled by one of the temporals (see "Function Classes").

| D | T | P | A |
|---|---|---|---|
| dúẇé· si | há·ẇíná | zû·ne | si |
| this way back | soon | will come | I |

*I will come back soon·*

| T | P |
|---|---|
| ˀe ṣu ˀe ná·nu | čáˀâiẓa·nu· |
| next day | it occurred |

*The next day arrived.*

The T slot is sometimes filled by a phrase composed of two temporals or of the negative, zázi, plus a temporal:

| T | P |
|---|---|
| ṣumí háṁa· | záˀâiẓa·nu· |
| already long ago | it occurred |

*It already happened long ago.*

| | T | S | P |
|---|---|---|---|
| ˀésgəskᴜ | zázi na | sai | záˀᴀɴᴇ |
| but | not yet | all | it is |

*But this isn't all yet.*

As in the case of the D slot, a clause may occasionally occur with two T slots, one preceding the P slot and the other following:

| T | D | P | T |
|---|---|---|---|
| ˀemí | dúẇé· ku | zíyádʸᴜ | ṣumí mâ·nu· |
| already | this way south | he passed | already long time |

*It has been a long time since he passed by going south.*

### MODIFIER SLOT (M)

A modifier slot with its filler functions as a modifier of the predicate. The filler of this slot is ordinarily a single attributive:

| M | D | P |
|---|---|---|
| ṣu ʔe ṣu núbəda | ṣu ʔe ṣu ʔai hauʔ ṅə | dʸúbənu· |
| alone | near down | he entered |

*Then he went in alone.*

|  | M | P | A |
|---|---|---|---|
| ʔésgəskᴜ | ṣu ẇínú | čėcɪ nə́déʔe·yaʔaṫᴀ | súẓú·ʔᴜ |
| but | fast | also will travel | we |

*But we will also travel fast.*

### INTERROGATIVE-MODAL SLOT (I)

An interrogative-modal slot may be filled by a variety of uninflected words classified as either interrogatives or modals (see "Function Classes"). The function of this slot with its filler is to form a question or to reinforce the mode (other than indicative) of the clause.

| I | D | S | P |
|---|---|---|---|
| zázi | há·di | hau | gȧkᴜ |
| not | where | someone | he is |

*There is nobody here.*

| I | P |
|---|---|
| ṣu ʔe zi | ṣáutɪsⱻ |
| what | you are planting |

*What are you planting?*

| I | O | P |
|---|---|---|
| k̇áucɪgái | du | ṫìčâ·gu |
| maybe | this | I change |

*Maybe I'll change it.*

| I | D | P |
|---|---|---|
| há·ṅé | dúk̇é· | kàigá |
| let me | that way | let me look |

*Let me look around.*

Interrogative or modal phrases sometimes fill the I slot. These are ordinarily composed of an interrogative or a modal together with zázi *not* or ʔégu *then:*

| I | P |
|---|---|
| zázi ʔíṫe | dʸúṁⱻ |
| not able to | he emerged |

*He couldn't get out.*

| I | D | P | A |
|---|---|---|---|
| ʔégu gúẇa· | sa | níuṁⱻ | si |
| then how | back | will emerge | I |

*How, then, will I get back out?*

### CONNECTIVE SLOT (C)

The connective slot with its filler occurs in clause-initial position and relates that clause to the preceding one. This slot is filled by one of the following connective particles: gu *and,* ʔe *and,* ʔégu *then,* ʔésgəskᴜ *but,* or by the combination ʔe ṫa *and thus.*

$\overbrace{\text{gu}}^{\text{C}}$ $\overbrace{\text{ʔeu čúṅᴀza}}^{\text{P}}$
and he is healthy
*And he is healthy.*

$\overbrace{\text{ʔésgəskᴜ}}^{\text{C}}$ $\overbrace{\text{ʔeu ṣu ʔe ṣu díuẇáwa·sa čėcɪ}}^{\text{P}}$
but they were sick also
*But they were sick, too.*

## SEQUENTIAL ORDERING OF FUNCTION SLOTS

The structure of clauses is analyzed here in terms of the sequential ordering of the function slots. The statistical treatment is based on the types of clauses occurring in a sample of text material consisting of myths narrated by one informant. The sample contains about 4,500 words and was transcribed from 55 minutes of recorded narrative.

### PREDICATE CLAUSES

The large majority of clauses in the text are predicate clauses. Of 910 clauses identified in the text there are 868 of this type.

Predicate clauses are built around a predicate slot filled by a verb or verb phrase. The predicate clause may contain only a predicate slot, or it may include a wide variety of slots preceding and/or following the predicate slot. The structure of all predicate clauses in the text is indicated in charts 7 and 8. The former shows the structure of P1 clauses, i.e., clauses in which the predicate slot is filled by a non-future tense verb. P2 clauses, outlined in chart 8, contain verbs in the future tense. Formulas indicate the sequential arrangement of the function slots and employ the following abbreviations:

P = Predicate slot
S = Subject slot
O = Object slot
D = Directional-locational slot
T = Time slot
M = Modifier slot
I = Interrogative-modal slot
C = Connective slot
A = Auxiliary slot

The number of occurrences of each type of predicate clause in the text is indicated following the formula. Although certain details of the chart are arbitrary, the arrangement of the formulas indicates an increasing complexity from left to right in terms of the number of slots contained in the clause. The slots are introduced in a specific order from top to bottom within each box bounded by solid lines and from left to right across contiguous boxes. This order (P, S, O, D, T, M, I, C) reflects, to some degree, an increasingly peripheral nature of the slots.

| | | | | | | |
|---|---|---|---|---|---|---|
| P 239 | SP 42<br>PS 19 | SOP 6 | SPO 2 | SDOP 1 | | CSDPO 1 |
| | | | | TSPO 1 | | |
| | | | | IOPS 1 | | CISPO 1 |
| | | DSP 12<br>DPS 12<br>SDP 13<br>SPD 1 | DSDP 1<br>DSPD 1<br>DSPS 1<br>SDSP 1 | DTPS 2<br>TDSP 2<br>TSDP 2 | TSPD 1<br>TDPS 1 | |
| | | | | DSMP 1 | | |
| | | | | IDSP 2<br>ISPD 2 | IDPS 1 | CIDSP 1 |
| | | | | CDSP 3 | CSDP 2 | |
| | | TSP 2<br>TPS 2 | STP 1<br>TSTP 1 | CTSP 1<br>CTPS 1 | | |
| | | MSP 2<br>PMS 1 | SMP 2 | CSMP 1 | | |
| | | ISP 8 | | | | |
| | | CSP 5 | CPS 2 | | | |
| | OP 20<br>PO 14 | DOP 7<br>DPO 5<br>ODP 8 | PDO 2<br>DOPO 1 | OTDP 1 | | IDOTP 1 |
| | | | | IODP 2 | IDOPO 1 | |
| | | | | CDOP 2<br>CDPO 2 | CODP 1 | |
| | | TOP 1 | TPO 2 | IOPT 1 | | CITOP 1 |
| | | | | CTOP 2 | | |
| | | MOP 1 | | | | |
| | | IOP 14<br>IPO 2 | IOPO 1 | CIOP 2 | | |
| | | COP 7 | CPO 2 | | | |
| | DP 138<br>PD 2<br>DPD 2 | DTP 5<br>TDP 5<br>DPT 3 | DTPT 1<br>TDPT 1 | CTDP 2 | | |
| | | MDP 5<br>DMP 1 | MDPM 1 | CMDP 1 | | |
| | | IDP 6 | | CIDP 1 | | |
| | | CDP 8 | CPD 1 | | | |
| | TP 32<br>PT 1 | CTP 4 | | CTPM 1 | | |
| | MP 7<br>PM 1 | IMP 1 | | | | |
| | | CMP 4 | CPM 1 | | | |
| | IP 16 | CIP 2 | | | | |
| | CP 17 | | | | | |

CHART 7.—*P1 Clause Types*

| | | | | |
|---|---|---|---|---|
| PA 22 | SPA 4 | SDPA 1<br>DSPA 1 | CSPDA 1 | |
| | | ISPA 1<br>IPAS 1 | | |
| | | OSPA 2 | | |
| | OPA 3 | ODPA 1 | TDPAO 1 | CTDPAO 1 |
| | | DODPA 1 | CODPA 1 | CIDOPA 1 |
| | | TOPA 1<br>OTPA 1 | | |
| | | IOPA 3<br>IPAO 1 | CIOPA 1 | |
| | DPA 9<br>PDA 1<br>DPDA 1 | DTPA 1<br>DPAT 2 | | |
| | | IDPA 6<br>IPAD 1 | | |
| | TPA 3 | ITPA 1 | | |
| | MPA 1 | IPAM 1 | | |
| | | CMPA 3 | | |
| | IPA 8 | CIPA 1 | | |
| | CPA 3 | | | |

Chart 8.—*P2 Clause Types*

In spite of some freedom of order in the arrangement of slots within the clause there are definite restrictions on their distribution. Considering the slots in the order that they are introduced in the charts following the P slot, the following observations can be made.

The A slot always follows the P slot, usually contiguously. There are a few occurrences, though, of a D slot intervening between the P and A slots (PDA, DPDA and CSPDA).

The S and O slots may each occur either preceding or following the P slot. The S slot and, to a lesser extent, the O slot occur with greater frequency preceding than following the P slot. These slots are generally contiguous to the P slot or separated from it by one another, but occasionally a D, T, or M slot may intervene as in the sequences SDP, OTDP, DSMP, etc.

Most commonly the D slot occurs immediately preceding the P slot or separated from it by an S or O slot, or less frequently by a T or M slot. When not occurring in this position it immediately follows the P slot, or there may be two D slots in the clause, as in the sequences DSDP, DSPD and MDPD.

The distribution of the T and M slots is comparable to that of the D slot. They generally precede, but sometimes immediately follow, the P slot. When preceding the P slot they may be separated from it by an S, O, D, T or M slot.

The I and C slots are the most restricted in their distribution. An I slot occurs only clause-initially or preceded by a C slot, while a C slot may occur only in initial position in the clause.

### NON-PREDICATE CLAUSES

Non-predicate clauses are of rather infrequent occurrence in the text, comprising only 42 of the 910 clauses. Of these, the most commonly occurring is the prepositional clause, of which there are 30 in the text.

Of the prepositional clauses, seven consist of a D slot only:

| D | | |
|---|---|---|
| diʔ | bə́nísdé | ṅə |
| here | west side | down |

*It was down here on the west side.*

Sixteen are composed of a D slot followed by an S slot:

| D | | | S |
|---|---|---|---|
| dúẇé· | dʸídi | ṅə | čí·ná |
| this way | north | down | river |

*It was at the river flowing from the north.*

Four are made up of a D slot preceded by an S slot:

| S | | D |
|---|---|---|
| hiɢâ·ntɪ | ʔáʔá·táwɪ | yúk̓é· |
| giant | key | there |

*The giant's key is there.*

In addition, there is one clause of the type CD and two of the type CDS:

| C | D | S |
|---|---|---|
| gu | dí·y̓ú | bisâ·ri |
| and | here | blanket |

*And here is a blanket.*

There are ten ʔeu clauses in the text. These all contain an S slot either introduced or closed by the particle ʔeu. In this context ʔeu may be translated as *it was* or *there was.*

| S | |
|---|---|
| ʔeu | č̓ášápᴀ |
| | Satan |

*It was Satan.*

All but one of the ʔeu clauses is composed entirely of an S slot. The one exception has a C slot preceding the S slot:

| C | S | | | |
|---|---|---|---|---|
| ʔe ṣu ʔe t̓a | ʔeu ṣu ʔe má·čᴜ | ʔískᴀ | háidí | ʔeu |
| thus | mule | one | which | |

*There was one special mule.*

There are only two interrogative clauses in the text, but such clauses are more common in ordinary conversation than this sampling would indicate. An interrogative clause consists uniformly of an I slot followed by an S slot:

| I | S |
|---|---|
| há·di | dʸá·mí |
| where | eagle |

*Where is the eagle?*

### INDEPENDENT VERSUS DEPENDENT CLAUSES

Most clauses are independent clauses and as such may stand alone as full sentences. A dependent clause, on the other hand, never occurs in isolation but is closely linked to a contiguous independent clause. Three types of dependent clauses are identified in the text:

1. Prepositional clauses:

di ˀ bə́nísdé ṅə *It was down here on the west side.*

2. Clauses introduced by a C slot filled by gu *and*:

gu ˀískᴀ ˀeu ṣu čáˀáubənaiˀɪ *And he put one of them in (his pocket).*

3. Clauses introducing or closing a quotation:

dʸéiṅet̓ᴀ ˀeu dʸá·mí *The eagle said.*

Clauses introduced by gu differ from those introduced by other connectives in that they presuppose a preceding clause to which they are linked:

| O | D | P | C | O | D | P |
|---|---|---|---|---|---|---|
| du ˀískᴀ | ˀeu hé·ẏá | cá·ca·dʸani | gu | du ˀískᴀ | ˀeu hé·ẏá | tíšá·tɪ-šé |
| this one | with it | he breathes | and | this one | with it | he has power |

*With one he breathes and with the other he has power.*

Clauses introduced by ˀésgəskᴜ or other connectives, on the other hand, may stand alone as independent clauses:

| C | T | P | M |
|---|---|---|---|
| ˀésgəskᴜ | na | č̓ápᴀšɪ | k̓úimí |
| but | yet | dark | slightly |

*But it was still a little dark.*

### SUPRACLAUSE STRUCTURE

In this section the clause will be examined within the context of longer stretches of speech. Certain elements will first be described which are not considered to be an integral part of any clause. This will be followed by a consideration of the position of dependent clauses within larger syntactic units.

### FRAGMENT UTTERANCES

Certain words or short sequences of words occur both in narrative and in conversation which may be spoken in isolation, but which are meaningless apart from the context in which they are spoken. The fragment may be semantically dependent on the immediate linguistic context or on the non-linguistic context.

Fragment utterances are most commonly exclamations or short answers to questions. They do not occupy a definable slot within a clause or larger unit and are themselves too brief for syntactic analysis. The following are examples of the 103 fragment utterances occurring in the text:

| | |
|---|---|
| ha· | *Yes.* |
| hiṅá | *O.K.* |
| he | *What?* |
| ˀeu he | *Is that so?* |
| mə· na ṣu | *Let's go!* |
| haẇí· | *Here!* |
| wə́·ˀé | *Thanks.* |

## COMPLEX SENTENCES

The narrative text on which this analysis is based consists, for the most part, of a series of independent clauses, each of which is in itself a complete structural unit. Since each independent clause is a complete sentence and is, in general, relatively brief, a Santa Ana narrative appears highly fragmented as compared with English.

There are in the text two types of complex sentences, each composed of an independent clause with one or more dependent clauses. The first type of complex sentence is composed of an independent clause followed by one or more dependent clauses of the type introduced by the connective gu. There are 43 sentences of this type in the text, including the following example:

independent clause — dependent clause
ˀai ṣu ˀe ˀískᴀ čáˀáuċáyucᴀ gu ˀískᴀ ˀeu ṣu čáˀáubənaiˀɪ
one he broke it and one he put it in
*Then he broke one and put one in (his pocket).*

The second type of complex sentence is composed of an independent clause preceded or followed by one or more prepositional clauses. There are 27 occurrences of this type of sentence in the text, including the following examples:

independent clause — dependent clause
ˀe ṣu ˀe ṣu si yúk̓ʊ zùkʊ ˀeu sandiyâ·kʊ ˀai díˀái pák̓ᴀᴄɪṣʊ
back away he went St. James there gully
*Then St. James went away again into the gully.*

dependent clause | dependent clause | dependent clause
dúẇé· dʸídi ṅə čí·ná | diˀ bənísdé ṅə | k̇údaisk̇əṙə díˀái
this way north down river | here west side down | round-top there

independent clause
díˀái dʸá·ˀâuˀᴜ háçɑze·za gu č̇âuk̇ui-ṣanu
there they lived man and his wife

*On the west side of the river flowing from the north at Roundtop Mesa there lived a man and his wife.*

QUOTATIONS

Of the three types of dependent clauses described on page 139, two occur as parts of the complex sentences discussed above. The third type is that which introduces or closes a quotation and is ordinarily translated by such expressions as *he said, he said to him,* etc. The occurrence of these clauses closely parallels the English equivalents in that they may precede or follow the quotation, or they may be omitted entirely.

quotational clause | independent clause
ṣu ˀe ṣu ˀe dåcɪkᴜyᴀ | ṣu ṅáiziˀ si
he said to him | will lie I

*Then he said to him, "I am going to lie down."*

fragment utterance | quotational clause
ˀe ṣu ˀe ṣu hiṅá | dʸéiṅeṫᴀ ˀeu sandiyâ·kᴜ
O.K. | he said St. James

*"O.K.," said St. James.*

Quotations are sometimes preceded and followed by dependent quotational clauses:

quotational clause | fragment | quotational clause
ṣu ˀe ˀeu dʸá·mí ˀe č̇áza | hiṅá | dʸéiṅeṫᴀ
eagle he said | O.K. | he said

*Then the eagle said, "O.K."*

Constructions such as these are not regarded as complex sentences because dependent quotational clauses may be linked not only to a single fragment or independent clause but, in extended quotations, to a whole series of sentences, some of which may themselves be complex.

# APPENDIX 1. VERB PARADIGMS

## TRANSITIVE VERB PRIMARY PARADIGMS

### CLASS A

#### INDICATIVE

| | |
|---|---|
| síuk̇àicᴀ | *I hit him* |
| ṣú·k̇àicᴀ | *you hit him* |
| gú·k̇àicᴀ | *he hit him* |
| zíuk̇àicᴀ | *he (4th person) hit him* |
| ṣáuk̇àicᴀ | *I hit you* |
| dʸú·k̇àicᴀ | *you hit me* |
| sgú·k̇àicᴀ | *he hit me* |
| gúẓú·k̇àicᴀ | *he hit you* |

#### HORTATIVE

| | |
|---|---|
| káuk̇àicᴀ | *let me hit him* |
| pú·k̇àicᴀ | *hit him* |
| píuk̇àicᴀ | *let him hit him* |
| ṗíuk̇àicᴀ | *let him (4th person) hit him* |
| ṣáuk̇àicᴀ | *let me hit you* |
| gú·k̇àicᴀ | *hit me* |
| núẓú·k̇àicᴀ | *let him hit me* |
| ẓú·k̇àicᴀ | *let him hit you* |

#### NEGATIVE

| | |
|---|---|
| zázi sgú·k̇àicᴀ | *I didn't hit him* |
| zázi ṣú·k̇àicᴀ | *you didn't hit him* |
| zázi gú·k̇àicᴀ | *he didn't hit him* |
| zázi zíuk̇àicᴀ | *he (4th person) didn't hit him* |
| zázi ṣáuk̇àicᴀ | *I didn't hit you* |
| zázi dʸú·k̇àicᴀ | *you didn't hit me* |
| zázi sdʸú·k̇àicᴀ | *he didn't hit me* |
| zázi gúẓú·k̇àicᴀ | *he didn't hit you* |

#### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· níuk̇àicᴀ | *let me not hit him* |
| bâ·mí· sgú·k̇àicᴀ | *don't hit him* |
| bâ·mí· píuk̇àicᴀ | *let him not hit him* |
| bâ·mí· ṗíuk̇àicᴀ | *let him (4th person) not hit him* |
| bâ·mí· ṣáuk̇àicᴀ | *let me not hit you* |
| bâ·mí· gú·k̇àicᴀ | *don't hit me* |
| bâ·mí· núẓú·k̇àicᴀ | *let him not hit me* |
| bâ·mí· sdʸú·k̇àicᴀ | *let him not hit you* |

#### DUBITATIVE

| | |
|---|---|
| tíuk̇àicᴀ | *maybe I hit him* |
| çú·k̇àicᴀ | *maybe you hit him* |
| dʸú·k̇àicᴀ | *maybe he hit him* |
| díuk̇àicᴀ | *maybe he (4th person) hit him* |
| ẓáuk̇àicᴀ | *maybe I hit you* |
| dʸú·k̇àicᴀ | *maybe you hit me* |
| túẓú·k̇àicᴀ | *maybe he hit me* |
| dʸúẓú·k̇àicᴀ | *maybe he hit you* |

#### FUTURE HORTATIVE

| | |
|---|---|
| ba níuk̇àicᴀ | *let me hit him (in the future)* |
| ba çú·k̇àicᴀ | *hit him* |
| ba píuk̇àicᴀ | *let him hit him* |
| ba ṗíuk̇àicᴀ | *let him (4th person) hit him* |
| ba ẓáuk̇àicᴀ | *let me hit you* |
| ba dʸú·k̇àicᴀ | *hit me* |
| ba núẓú·k̇àicᴀ | *let him hit me* |
| ba dʸúẓú·k̇àicᴀ | *let him hit you* |

### CLASS B

#### INDICATIVE

| | |
|---|---|
| sèkᴜ | *I bit him* |
| ṣàkᴜ | *you bit him* |
| gàkᴜ | *he bit him* |
| ċàkᴜ | *he (4th person) bit him* |
| ṩàkᴜ | *I bit you* |
| č̇àkᴜ | *you bit me* |
| sk̇àkᴜ | *he bit me* |
| gə́ẓàkᴜ | *he bit you* |

#### HORTATIVE

| | |
|---|---|
| kàkᴜ | *let me bite him* |
| pàkᴜ | *bite him* |
| pèkᴜ | *let him bite him* |
| ṗèkᴜ | *let him (4th person) bite him* |
| ṩàkᴜ | *let me bite you* |
| k̇àkᴜ | *bite me* |
| nə́ẓàkᴜ | *let him bite me* |
| ẓàkᴜ | *let him bite you* |

### NEGATIVE

| | |
|---|---|
| zázi sgàkᴜ | *I didn't bite him* |
| zázi ṣàkᴜ | *you didn't bite him* |
| zázi gàkᴜ | *he didn't bite him* |
| zázi ċàkᴜ | *he (4th person) didn't bite him* |
| zázi ṩàkᴜ | *I didn't bite you* |
| zázi č̇àkᴜ | *you didn't bite me* |
| zázi sč̇àkᴜ | *he didn't bite me* |
| zázi gə́ẓàkᴜ | *he didn't bite you* |

### DUBITATIVE

| | |
|---|---|
| tèkᴜ | *maybe I bit him* |
| c̣àkᴜ | *maybe you bit him* |
| dʸàkᴜ | *maybe he bit him* |
| ṫàkᴜ | *maybe he (4th person) bit him* |
| ċ̣àkᴜ | *maybe I bit you* |
| č̇àkᴜ | *maybe you bit me* |
| tə́ẓàkᴜ | *maybe he bit me* |
| dʸə́ẓàkᴜ | *maybe he bit you* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· nèkᴜ | *let me not bite him* |
| bâ·mí· sgàkᴜ | *don't bite him* |
| bâ·mí· pèkᴜ | *let him not bite him* |
| bâ·mí· ṗèkᴜ | *let him (4th person) not bite him* |
| bâ·mí· ṩàkᴜ | *let me not bite you* |
| bâ·mí· k̇àkᴜ | *don't bite me* |
| bâ·mí· nə́ẓàkᴜ | *let him not bite me* |
| bâ·mí· sč̇àkᴜ | *let him not bite you* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba nèkᴜ | *let me bite him (in the future)* |
| ba c̣àkᴜ | *bite me* |
| ba pèkᴜ | *let him bite him* |
| ba ṗèkᴜ | *let him (4th person) bite him* |
| ba ċ̣àkᴜ | *let me bite you* |
| ba č̇àkᴜ | *bite me* |
| ba nə́ẓàkᴜ | *let him bite me* |
| ba dʸə́ẓàkᴜ | *let him bite you* |

## CLASS C

### INDICATIVE

| | |
|---|---|
| ċí·zúᴡᴀ | *I paid him* |
| ší·zúᴡᴀ | *you paid him* |
| zí·zúᴡᴀ | *he paid him* |
| ṣáizúᴡᴀ | *I paid you* |
| č̇úizúᴡᴀ | *you paid me* |
| sk̇úizúᴡᴀ | *he paid me* |
| gə́dí·zúᴡᴀ | *he paid you* |

### NEGATIVE

| | |
|---|---|
| zázi sdʸí·zúᴡᴀ | *I didn't pay him* |
| zázi ší·zúᴡᴀ | *you didn't pay him* |
| zázi zí·zúᴡᴀ | *he didn't pay him* |
| zázi ṣáizúᴡᴀ | *I didn't pay you* |
| zázi č̇úizúᴡᴀ | *you didn't pay me* |
| zázi sč̇í·zúᴡᴀ | *he didn't pay me* |
| zázi gə́dí·zúᴡᴀ | *he didn't pay you* |

### DUBITATIVE

| | |
|---|---|
| ṫí·zúᴡᴀ | *maybe I paid him* |
| cí·zúᴡᴀ | *maybe you paid him* |
| dí·zúᴡᴀ | *maybe he paid him* |
| c̣áizúᴡᴀ | *maybe I paid you* |
| č̇úizúᴡᴀ | *maybe you paid me* |
| tə́dí·zúᴡᴀ | *maybe he paid me* |
| dʸídí·zúᴡᴀ | *maybe he paid you* |

### HORTATIVE

| | |
|---|---|
| k̇áizúᴡᴀ | *let me pay him* |
| pí·zúᴡᴀ | *pay him* |
| ṗí·zúᴡᴀ | *let him pay him* |
| ṣáizúᴡᴀ | *let me pay you* |
| k̇úizúᴡᴀ | *pay me* |
| nə́dí·zúᴡᴀ | *let him pay me* |
| dí·zúᴡᴀ | *let him pay you* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· ṅí·zúᴡᴀ | *let me not pay him* |
| bâ·mí· sdʸí·zúᴡᴀ | *don't pay him* |
| bâ·mí· ṗí·zúᴡᴀ | *let him not pay him* |
| bâ·mí· ṣáizúᴡᴀ | *let me not pay you* |
| bâ·mí· k̇úizúᴡᴀ | *don't pay me* |
| bâ·mí· nə́dí·zúᴡᴀ | *let him not pay me* |
| bâ·mí· sč̇í·zúᴡᴀ | *let him not pay you* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba ṅí·zúᴡᴀ | *let me pay him (in the future)* |
| ba cí·zúᴡᴀ | *pay him* |
| ba ṗí·zúᴡᴀ | *let him pay him* |
| ba c̣áizúᴡᴀ | *let me pay you* |
| ba č̇úizúᴡᴀ | *pay me* |
| ba nə́dí·zúᴡᴀ | *let him pay me* |
| ba dʸídí·zúᴡᴀ | *let him pay you* |

### CLASS D

| INDICATIVE | | HORTATIVE | |
|---|---|---|---|
| ċìudi | *I gave it to him* | k̇àudi | *let me give it to him* |
| šìudi | *you gave it to him* | pìudi | *give it to him* |
| zìudi | *he gave it to him* | ṗìudi | *let him give it to him* |
| ṩàudi | *I gave it to you* | ṩàudi | *let me give it to you* |
| dʸùdi | *you gave it to me* | gùdi | *give it to me* |
| sgùdi | *he gave it to me* | nə́dìudi | *let him give it to me* |
| gə́dìudi | *he gave it to you* | dìudi | *let him give it to you* |

| NEGATIVE | | NEGATIVE HORTATIVE | |
|---|---|---|---|
| zázi sdʸìudiˀ | *I didn't give it to him* | bâ·mí· ṅìudi | *let me not give it to him* |
| zázi šìudiˀ | *you didn't give it to him* | bâ·mí· sdʸìudi | *don't give it to him* |
| zázi zìudiˀ | *he didn't give it to him* | bâ·mí· ṗìudi | *let him not give it to him* |
| zázi ṩàudiˀ | *I didn't give it to you* | bâ·mí· ṩàudi | *let me not gi ve it to you* |
| zázi dʸùdiˀ | *you didn't give it to me* | bâ·mí· gùdi | *don't give it t o me* |
| zázi sdʸùdiˀ | *he didn't give it to me* | bâ·mí· nə́dìudi | *let him not give it to me* |
| zázi gə́dìudiˀ | *he didn't give it to you* | bâ·mí· sč̇ùdi | *let him not give it to you* |

| DUBITATIVE | | FUTURE HORTATIVE | |
|---|---|---|---|
| ṫìudi | *maybe I gave it to him* | ba ṅìudi | *let me give it to him (in the future)* |
| cìudi | *maybe you gave it to him* | ba cìudi | *give it to hi m* |
| dìudi | *maybe he gave it to him* | ba ṗìudi | *let him give it to him* |
| ċ̣àudi | *maybe I gave it to you* | ba ċ̣àudi | *let me give it to you* |
| dʸùdi | *maybe you gave it to me* | ba dʸùdi | *give it to me* |
| tə́dìudi | *maybe he gave it to me* | ba nə́dìudi | *let him give it to me* |
| dʸídìudi | *maybe he gave it to you* | ba dʸídìudi | *let him give it to you* |

## TRANSITIVE VERB SECONDARY PARADIGMS

### REFLEXIVE

| INDICATIVE | | HORTATIVE | |
|---|---|---|---|
| ṡàkᴜ | *I bit myself* | káˀàkᴜ | *let me bite myself* |
| ṩàkᴜ | *you bit yourself* | č̇àkᴜ | *bite yourself* |
| káˀàkᴜ | *he bit himself* | páˀàkᴜ | *let him bite himself* |

| NEGATIVE | | NEGATIVE HORTATIVE | |
|---|---|---|---|
| zázi skáˀàkᴜ | *I didn't bite myself* | bâ·mí· ṅàkᴜ | *let me not bite myself* |
| zázi ṩàkᴜ | *you didn't bite yourself* | bâ·mí· skáˀàkᴜ | *don't bite yourse lf* |
| zázi káˀàkᴜ | *he didn't bite himself* | bâ·mí· páˀàkᴜ | *let him not bite himself* |

| DUBITATIVE | | FUTURE HORTATIVE | |
|---|---|---|---|
| táˀàkᴜ | *maybe I bit myself* | ba ṅàkᴜ | *let me bite myself (in the future)* |
| c̣áˀàkᴜ | *maybe you bit yourself* | ba c̣áˀàkᴜ | *bite yourself* |
| čáˀàkᴜ | *maybe he bit himself* | ba páˀàkᴜ | *let him bite himself* |

### PASSIVE

#### INDICATIVE

| | |
|---|---|
| sk̇áˀàguṅᴇ | *I was bitten* |
| šáˀàguṅᴇ | *you were bitten* |
| ċáˀàguṅᴇ | *he was bitten* |

#### NEGATIVE

| | |
|---|---|
| zázi sč̇áˀàguṅᴇ | *I wasn't bitten* |
| zázi šáˀàguṅᴇ | *you weren't bitten* |
| zázi ċáˀàguṅᴇ | *he wasn't bitten* |

#### DUBITATIVE

| | |
|---|---|
| ṫéˀèguṅᴇ | *maybe I was bitten* |
| cáˀàguṅᴇ | *maybe you were bitten* |
| ṫáˀàguṅᴇ | *maybe he was bitten* |

#### HORTATIVE

| | |
|---|---|
| néˀèguṅᴇ | *let me be bitten* |
| ẓáˀàguṅᴇ | *be bitten* |
| ṗéˀèguṅᴇ | *let him be bitten* |

#### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· néˀèguṅᴇ | *let me not be bitten* |
| bâ·mí· sč̇áˀàguṅᴇ | *don't be bitten* |
| bâ·mí· ṗéˀèguṅᴇ | *let him not be bitten* |

#### FUTURE HORTATIVE

| | |
|---|---|
| ba néˀèguṅᴇ | *let me be bitten (in the future)* |
| ba cáˀàguṅᴇ | *be bitten* |
| ba ṗéˀèguṅᴇ | *let him be bitten* |

## INTRANSITIVE VERB PARADIGMS

### CLASS 1–1

#### INDICATIVE

| | |
|---|---|
| síuyá | *I skinned it* |
| ṣúyá | *you skinned it* |
| gúyá | *he skinned it* |

#### NEGATIVE

| | |
|---|---|
| zázi sgúyá | *I didn't skin it* |
| zázi ṣúyá | *you didn't skin it* |
| zázi gúyá | *he didn't skin it* |

#### DUBITATIVE

| | |
|---|---|
| tíuyá | *maybe I skinned it* |
| çúyá | *maybe you skinned it* |
| dʸúyá | *maybe he skinned it* |

#### HORTATIVE

| | |
|---|---|
| káuyá | *let me skin it* |
| púyá | *skin it* |
| píẏúyá | *let him skin it* |

#### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· káuyá | *let me not skin it* |
| bâ·mí· sgúyá | *don't skin it* |
| bâ·mí· píẏúyá | *let him not skin it* |

#### FUTURE HORTATIVE

| | |
|---|---|
| ba níuyá | *let me skin it (in the future)* |
| ba çúyá | *skin it* |
| ba píẏúyá | *let him skin it* |

### CLASS 1–3

Class 1–3 verbs are inflected like those of Class 1–1 except that allomorph 114H occurs in the second person hortative:

| | |
|---|---|
| ˀəsk̇ᴀ | *drink it* |

### CLASS 1–16

#### INDICATIVE

| | |
|---|---|
| ṡìkᴜ | *I am located* |
| ṣȧkᴜ | *you are located* |
| gȧkᴜ | *he is located* |

#### NEGATIVE

| | |
|---|---|
| zázi sgȧkᴜ | *I am not located* |
| zázi ṣȧkᴜ | *you are not located* |
| zázi gȧkᴜ | *he is not located* |

#### HORTATIVE

| | |
|---|---|
| kȧkᴜ | *let me be located* |
| ẓȧkᴜ | *be located* |
| píˀìkᴜ | *let him be located* |

#### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· kȧkᴜ | *let me not be located* |
| bâ·mí· sgȧkᴜ | *don't be located* |
| bâ·mí· píˀìkᴜ | *let him not be located* |

#### DUBITATIVE

| | |
|---|---|
| tíˀìkᴜ | *maybe I am located* |
| çákᴜ | *maybe you are located* |
| dʸákᴜ | *maybe he is located* |

#### FUTURE HORTATIVE

| | |
|---|---|
| ba ṅìkᴜ | *let me be located (in the future)* |
| ba çákᴜ | *be located* |
| ba píˀìkᴜ | *let him be located* |

### CLASS 1–17

#### INDICATIVE

| | |
|---|---|
| ṡíuyâ·ṅᴇ | *we skinned it* |
| ṣúyâ·ṅᴇ | *you all skinned it* |
| gúyâ·ṅᴇ | *they skinned it* |

#### NEGATIVE

| | |
|---|---|
| zázi sgúyâ·ṅᴇ | *we didn't skin it* |
| zázi ṣúyâ·ṅᴇ | *you all didn't skin it* |
| zázi gúyâ·ṅᴇ | *they didn't skin it* |

#### DUBITATIVE

| | |
|---|---|
| tíẏúyâ·ṅᴇ | *maybe we skinned it* |
| çúyâ·ṅᴇ | *maybe you all skinned it* |
| dʸúyâ·ṅᴇ | *maybe they skinned it* |

#### HORTATIVE

| | |
|---|---|
| ṅíuyâ·ṅᴇ | *let us skin it* |
| púyâ·ṅᴇ | *skin it (you all)* |
| píẏúyâ·ṅᴇ | *let them skin it* |

#### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· ṅíuyâ·ṅᴇ | *let us not skin it* |
| bâ·mí· sgúyâ·ṅᴇ | *don't skin it (you all)* |
| bâ·mí· píẏúyâ·ṅᴇ | *let them not skin it* |

#### FUTURE HORTATIVE

| | |
|---|---|
| ba ṅíuyâ·ṅᴇ | *let us skin it (in the future)* |
| ba çúyâ·ṅᴇ | *skin it (you all)* |
| ba píẏúyâ·ṅᴇ | *let them skin it* |

### CLASS 1–18

Class 1–18 verbs are inflected like those of Class 1–17 except that allomorphs 104Q and 105Q occur in the first person hortative and negative hortative:

| | |
|---|---|
| sṫíuyâ·ṅɜ | *let us two skin it* |

### CLASS 2–23

#### INDICATIVE

| | |
|---|---|
| sə́ẓâ·ˀᴀpᴇ | *we ate* |
| gə́ẓâ·ˀᴀpᴇ | *you all ate* |
| gâ·ˀᴀpᴇ | *they ate* |

#### NEGATIVE

| | |
|---|---|
| zázi sgâ·ˀᴀpᴇ | *we didn't eat* |
| zázi gə́ẓâ·ˀᴀpᴇ | *you all didn't eat* |
| zázi gâ·ˀᴀpᴇ | *they didn't eat* |

#### DUBITATIVE

| | |
|---|---|
| tə́ẓâ·ˀᴀpᴇ | *maybe we ate* |
| dʸə́ẓâ·ˀᴀpᴇ | *maybe you all ate* |
| dʸâ·ˀᴀpᴇ | *maybe they ate* |

#### HORTATIVE

| | |
|---|---|
| nə́ẓâ·ˀᴀpᴇ | *let us eat* |
| ẓâ·ˀᴀpᴇ | *eat (you all)* |
| pâ·ˀᴀpᴇ | *let them eat* |

#### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· nə́ẓâ·ˀᴀpᴇ | *let us not eat* |
| bâ·mí· sgâ·ˀᴀpᴇ | *don't eat (you all)* |
| bâ·mí· pâ·ˀᴀpᴇ | *let them not eat* |

#### FUTURE HORTATIVE

| | |
|---|---|
| ba nə́ẓâ·ˀᴀpᴇ | *let us eat (in the future)* |
| ba dʸə́ẓâ·ˀᴀpᴇ | *eat (you all)* |
| ba pâ·ˀᴀpᴇ | *let them eat* |

### CLASS 2–24

Class 2–24 verbs are inflected like those of Class 2–23 except that allomorphs 104M and 105M occur in the first person hortative and negative hortative:

| | |
|---|---|
| šâ·ˀᴀbe | *let us two eat* |

## CLASS 3–27

### INDICATIVE

| | |
|---|---|
| sgúwa·sa | *I am sick* |
| gúẓúwa·sa | *you are sick* |
| zíwa·sa | *he is sick* |

### NEGATIVE

| | |
|---|---|
| zázi sd$^y$íwa·saˀ | *I am not sick* |
| zázi gúẓúwa·saˀ | *you are not sick* |
| zázi zíwa·saˀ | *he is not sick* |

### DUBITATIVE

| | |
|---|---|
| túẓúwa·sa | *maybe I am sick* |
| d$^y$úẓúwa·sa | *maybe you are sick* |
| díwa·sa | *maybe he is sick* |

### HORTATIVE

| | |
|---|---|
| núẓúwa·sa | *let me be sick* |
| ẓúwa·sa | *be sick* |
| píwa·sa | *let him be sick* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· núẓúwa·sa | *let me not be sick* |
| bâ·mí· sd$^y$íwa·sa | *don't be sick* |
| bâ·mí· píwa·sa | *let him not be sick* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba núẓúwa·sa | *let me be sick (in the future)* |
| ba d$^y$úẓúwa·sa | *be sick* |
| ba píwa·sa | *let him be sick* |

## CLASS 4–3

### INDICATIVE

| | |
|---|---|
| sìukAI | *I am satisfied* |
| ṣúkái | *you are satisfied* |
| kúkái | *he is satisfied* |

### NEGATIVE

| | |
|---|---|
| zázi skúkái | *I am not satified* |
| zázi ṣúkái | *you are not satisfied* |
| zázi kúkái | *he is not satisfied* |

### DUBITATIVE

| | |
|---|---|
| tìukAI | *maybe I am satisfied* |
| çúkái | *maybe you are satisfied* |
| čúkái | *maybe he is satisfied* |

### HORTATIVE

| | |
|---|---|
| kàukAI | *let me be satisfied* |
| ˀúkái | *be satisfied* |
| piukái | *let him be satisfied* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· kàukAI | *let me not be satisfied* |
| bâ·mí· skúkái | *don't be satisfied* |
| bâ·mí· piukái | *let him not be satisfied* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba nìukAI | *let me be satisfied (in the future)* |
| ba çúkái | *be satisfied* |
| ba piukái | *let him be satisfied* |

## CLASS 4–5

### INDICATIVE

| | |
|---|---|
| siẓə̀cA | *I ran* |
| šiẓə̀cA | *you ran* |
| kiẓə̀cA | *he ran* |

### NEGATIVE

| | |
|---|---|
| zázi skiẓə̀cA | *I didn't run* |
| zázi šiẓə̀cA | *you didn't run* |
| zázi kiẓə̀cA | *he didn't run* |

### DUBITATIVE

| | |
|---|---|
| tiẓə̀cA | *maybe I ran* |
| ciẓə̀cA | *maybe you ran* |
| čiẓə̀cA | *maybe he ran* |

### HORTATIVE

| | |
|---|---|
| kiẓə̀cA | *let me run* |
| ṫíẓə̀cA | *run* |
| piẓə̀cA | *let him run* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· kiẓə̀cA | *let me not run* |
| bâ·mí· skiẓə̀cA | *don't run* |
| bâ·mí· píẓə̀cA | *let him not run* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba niẓə̀cA | *let me run (in the future)* |
| ba ciẓə̀cA | *run* |
| ba piẓə̀cA | *let him run* |

## CLASS 5–2

### INDICATIVE

| | |
|---|---|
| síẇî·tᴇyᴀ | *I worshiped* |
| ṣúẇî·tᴇyᴀ | *you worshiped* |
| kúẇî·tᴇyᴀ | *he worshiped* |

### NEGATIVE

| | |
|---|---|
| zázi skúẇî·tᴇyᴀ | *I didn't worship* |
| zázi ṣúẇî·tᴇyᴀ | *you didn't worship* |
| zázi kúẇî·tᴇyᴀ | *he didn't worship* |

### DUBITATIVE

| | |
|---|---|
| tíẇî·tᴇyᴀ | *maybe I worshiped* |
| ç̣úẇî·tᴇyᴀ | *maybe you worshiped* |
| čúẇî·tᴇyᴀ | *maybe he worshiped* |

### HORTATIVE

| | |
|---|---|
| kúẇî·tᴇyᴀ | *let me worship* |
| č̇úwî·tᴇyᴀ | *worship* |
| púẇî·tᴇyᴀ | *let him worship* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· kúẇî·tᴇyᴀ | *let me not worship* |
| bâ·mí· skúẇî·tᴇyᴀ | *don't worship* |
| bâ·mí· púẇî·tᴇyᴀ | *let him not worship* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba níẇî·tᴇyᴀ | *let me worship (in the future)* |
| ba ç̣úẇî·tᴇyᴀ | *worship* |
| ba púẇî·tᴇyᴀ | *let him worship* |

## CLASS 5–8

### INDICATIVE

| | |
|---|---|
| su̇pᴇ | *I ate* |
| ṣu̇pᴇ | *you ate* |
| ku̇pᴇ | *he ate* |

### NEGATIVE

| | |
|---|---|
| zázi sku̇pᴇ | *I didn't eat* |
| zázi ṣu̇pᴇ | *you didn't eat* |
| zázi ku̇pᴇ | *he didn't eat* |

### DUBITATIVE

| | |
|---|---|
| tu̇pᴇ | *maybe I ate* |
| ç̣u̇pᴇ | *maybe you ate* |
| dʸúpᴇ | *maybe he ate* |

### HORTATIVE

| | |
|---|---|
| ku̇pᴇ | *let me eat* |
| č̇úpᴇ | *eat* |
| pu̇pᴇ | *let him eat* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· ku̇pᴇ | *let me not eat* |
| bâ·mí· sku̇pᴇ | *don't eat* |
| bâ·mí· pu̇pᴇ | *let him not eat* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba nu̇pᴇ | *let me eat (in the future)* |
| ba ç̣u̇pᴇ | *eat* |
| ba pu̇pᴇ | *let him eat* |

## CLASS 5–9

Class 5–9 is inflected like Class 5–8 except that allomorphs 104G and 105G occur in the first person hortative and negative hortative:

núẇᴀtâ·ṅiẓaṅᴇ *let us work*

## CLASS 5–10

Class 5–10 differs from Classes 5–8 and 5–9 in that it takes allomorphs 104M and 105M in the first person hortative and negative hortative:

šútâ·ṅiẓaṅⱻ *let us two work*

## CLASS 6–3

### INDICATIVE

| | |
|---|---|
| sê·ni | *I walked* |
| ṣâ·ni | *you walked* |
| k̇â·ni | *he walked* |

### NEGATIVE

| | |
|---|---|
| zázi sk̇â·ni | *I didn't walk* |
| zázi ṣâ·ni | *you didn't walk* |
| zázi k̇â·ni | *he didn't walk* |

### DUBITATIVE

| | |
|---|---|
| tê·ni | *maybe I walked* |
| ç̣â·ni | *maybe you walked* |
| č̇â·ni | *maybe he walked* |

### HORTATIVE

| | |
|---|---|
| kâ·ni | *let me walk* |
| ʔâ·ni | *walk* |
| ṗê·ni | *let him walk* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· kâ·ni | *let me not walk* |
| bâ·mí· sk̇â·ni | *don't walk* |
| bâ·mí· ṗê·ni | *let him not walk* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba nê·ni | *let me walk (in the future)* |
| ba ç̣â·ni | *walk* |
| ba ṗê·ni | *let him walk* |

## CLASS 7–13

### INDICATIVE

| | |
|---|---|
| sáza | *I said* |
| gə́ç̣ᴀᴢᴀ | *you said* |
| k̇áza | *he said* |

### NEGATIVE

| | |
|---|---|
| zázi sk̇áza | *I didn't say* |
| zázi gə́ç̣ᴀᴢᴀ | *you didn't say* |
| zázi k̇áza | *he didn't say* |

### DUBITATIVE

| | |
|---|---|
| táza | *maybe I said* |
| dʸə́ç̣ᴀᴢᴀ | *maybe you said* |
| č̇áza | *maybe he said* |

### HORTATIVE

| | |
|---|---|
| káza | *let me say* |
| ẓáza | *say* |
| ṗáza | *let him say* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· káza | *let me not say* |
| bâ·mí· sk̇áza | *don't say* |
| bâ·mí· ṗáza | *let him not say* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba náza | *let me say (in the future)* |
| ba dʸə́ç̣ᴀᴢᴀ | *say* |
| ba ṗáza | *let him say* |

## CLASS 7–15

### INDICATIVE

| | |
|---|---|
| ṡa | *it is mine* |
| gə́ẓá | *it is yours* |
| k̇a | *it is his* |
| ṩa | *you are mine* |

### NEGATIVE

| | |
|---|---|
| zázi sk̇a | *it isn't mine* |
| zázi gə́ẓá | *it isn't yours* |
| zázi k̇a | *it isn't his* |
| zázi ṩa | *you aren't mine* |

### DUBITATIVE

| | |
|---|---|
| ta | *maybe it is mine* |
| dʸə́ẓá | *maybe it is yours* |
| č̇a | *maybe it is his* |
| ç̣̇a | *maybe you are mine* |

### HORTATIVE

| | |
|---|---|
| ṅa | *let it be mine* |
| ẓa | *let it be yours* |
| ṗa | *let it be his* |
| ṩa | *be mine* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· ṅa | *let it not be mine* |
| bâ·mí· sk̇a | *let it not be yours* |
| bâ·mí· ṗa | *let it not be his* |
| bâ·mí· ṩa | *don't be mine* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba ṅa | *let it be mine (in the future)* |
| ba dʸə́ẓá | *let it be yours* |
| ba ṗa | *let it be his* |
| ba ç̣̇a | *be mine* |

## CLASS 8–14

### INDICATIVE

| | |
|---|---|
| ṡúdʸašɪ | *I fasted* |
| gúẓúdʸašɪ | *you fasted* |
| gáudʸašɪ | *he fasted* |

### NEGATIVE

| | |
|---|---|
| zázi sgáudʸašɪ | *I didn't fast* |
| zázi gúẓúdʸašɪ | *you didn't fast* |
| zázi gáudʸašɪ | *he didn't fast* |

### DUBITATIVE

| | |
|---|---|
| túʔúdʸašɪ | *maybe I fasted* |
| dʸúẓúdʸašɪ | *maybe you fasted* |
| dʸáudʸašɪ | *maybe he fasted* |

### HORTATIVE

| | |
|---|---|
| kúʔúdʸašɪ | *let me fast* |
| ẓúdʸašɪ | *fast* |
| páudʸašɪ | *let him fast* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· kúʔúdʸašɪ | *let me not fast* |
| bâ·mí· sgáudʸašɪ | *don't fast* |
| bâ·mí· páudʸašɪ | *let him not fast* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba ṅúdʸašɪ | *let me fast (in the future)* |
| ba dʸúẓúdʸašɪ | *fast* |
| ba páudʸašɪ | *let him fast* |

## CLASS 9–11

### INDICATIVE

| | |
|---|---|
| ṡáudi | *I planted* |
| ṩáudi | *you planted* |
| káʔáudi | *he planted* |

### NEGATIVE

| | |
|---|---|
| zázi skáʔáudi | *I didn't plant* |
| zázi ṩáudi | *you didn't plant* |
| zázi káʔáudi | *he didn't plant* |

### DUBITATIVE

| | |
|---|---|
| táʔáudi | *maybe I planted* |
| çáʔáudi | *maybe you planted* |
| čáʔáudi | *maybe he planted* |

### HORTATIVE

| | |
|---|---|
| káʔáudi | *let me plant* |
| č̇áudi | *plant* |
| páʔáudi | *let him plant* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· káʔáudi | *let me not plant* |
| bâ·mí· skáʔáudi | *don't plant* |
| bâ·mí· páʔáudi | *let him not plant* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba ṅáudi | *let me plant (in the future)* |
| ba çáʔáudi | *plant* |
| ba páʔáudi | *let him plant* |

## CLASS 9–12

Class 9–12 verbs differ from those of Class 9–11 in that allomorphs 104N and 105N occur in the first person hortative and negative hortative:

| | |
|---|---|
| ṡáudiṁᴇ | *let us two plant* |

## CLASS 10–6

### INDICATIVE

| | |
|---|---|
| sí·baʔtᴜ | *I slept* |
| ší·baʔtᴜ | *you slept* |
| zí·baʔtᴜ | *he slept* |

### NEGATIVE

| | |
|---|---|
| zázi sdʸí·baʔtᴜ | *I didn't sleep* |
| zázi ší·baʔtᴜ | *you didn't sleep* |
| zázi zí·baʔtᴜ | *he didn't sleep* |

### HORTATIVE

| | |
|---|---|
| káibaʔtᴜ | *let me sleep* |
| ʔí·baʔtᴜ | *sleep* |
| píʔí·baʔtᴜ | *let him sleep* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· káibaʔtᴜ | *let me not sleep* |
| bâ·mí· sdʸí·baʔtᴜ | *don't sleep* |
| bâ·mí· píʔí·baʔtᴜ | *let him not sleep* |

#### DUBITATIVE

| | |
|---|---|
| tí·baʔtʊ | *maybe I slept* |
| cí·baʔtʊ | *maybe you slept* |
| dí·baʔtʊ | *maybe he slept* |

#### FUTURE HORTATIVE

| | |
|---|---|
| ba ní·baʔtʊ | *let me sleep (in the future)* |
| ba cí·baʔtʊ | *sleep* |
| ba píʔí·baʔtʊ | *let him sleep* |

### CLASS 10–7

#### INDICATIVE

| | |
|---|---|
| ċíkʊpᴀᴡᴀ | *I chopped* |
| šíkʊpᴀᴡᴀ | *you chopped* |
| zíkʊpᴀᴡᴀ | *he chopped* |

#### NEGATIVE

| | |
|---|---|
| zázi sdʸíkʊpᴀᴡᴀ | *I didn't chop* |
| zázi šíkʊpᴀᴡᴀ | *you didn't chop* |
| zázi zíkʊpᴀᴡᴀ | *he didn't chop* |

#### DUBITATIVE

| | |
|---|---|
| ṫíkʊpᴀᴡᴀ | *maybe I chopped* |
| cíkʊpᴀᴡᴀ | *maybe you chopped* |
| díkʊpᴀᴡᴀ | *maybe he chopped* |

#### HORTATIVE

| | |
|---|---|
| k̇ákʊpᴀᴡᴀ | *let me chop* |
| píkʊpᴀᴡᴀ | *chop* |
| pikʊpᴀᴡᴀ | *let him chop* |

#### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· k̇ákʊpᴀᴡᴀ | *let me not chop* |
| bâ·mí· sdʸíkʊpᴀᴡᴀ | *don't chop* |
| bâ·mí· pikʊpᴀᴡᴀ | *let him not chop* |

#### FUTURE HORTATIVE

| | |
|---|---|
| ba ṅíkʊpᴀᴡᴀ | *let me chop (in the future)* |
| ba cíkʊpᴀᴡᴀ | *chop* |
| ba pikʊpᴀᴡᴀ | *let him chop* |

### CLASS 10–21

#### INDICATIVE

| | |
|---|---|
| síkʊpawaṅᴇ | *we chopped* |
| šíkʊpawaṅᴇ | *you all chopped* |
| zíkʊpawaṅᴇ | *they chopped* |

#### NEGATIVE

| | |
|---|---|
| zázi sdʸíkʊpawaṅᴇ | *we didn't chop* |
| zázi šíkʊpawaṅᴇ | *you all didn't chop* |
| zázi zíkʊpawaṅᴇ | *they didn't chop* |

#### DUBITATIVE

| | |
|---|---|
| tikʊpawaṅᴇ | *maybe we chopped* |
| cíkʊpawaṅᴇ | *maybe you all chopped* |
| díkʊpawaṅᴇ | *maybe he chopped* |

#### HORTATIVE

| | |
|---|---|
| nikʊpawaṅᴇ | *let us chop* |
| píkʊpawaṅᴇ | *chop (you all)* |
| pikʊpawaṅᴇ | *let them chop* |

#### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· nikʊpawaṅᴇ | *let us not chop* |
| bâ·mí· sdʸíkʊpawaṅᴇ | *don't chop (you all)* |
| bâ·mi· pikʊpawaṅᴇ | *let them not chop* |

#### FUTURE HORTATIVE

| | |
|---|---|
| ba nikʊpawaṅᴇ | *let us chop (in the future)* |
| ba cíkʊpawaṅᴇ | *chop (you all)* |
| ba pikʊpawaṅᴇ | *let them chop* |

### CLASS 10–22

Class 10–22 verbs are inflected like those of Class 10–21 except that allomorphs 104P and 105P occur in the first person hortative and negative hortative:

| | |
|---|---|
| stikʊpawaṅⱻ | *let us two chop* |

### CLASS 11–25

| INDICATIVE | | HORTATIVE | |
|---|---|---|---|
| sə́dėkᴜ | *we went* | nə́dėkᴜ | *let us go* |
| gə́dėkᴜ | *you all went* | dėkᴜ | *go (you all)* |
| zėkU | *they went* | pėkᴜ | *let them go* |

| NEGATIVE | | NEGATIVE HORTATIVE | |
|---|---|---|---|
| zázi sdʸėkᴜ | *we didn't go* | bâ·mí· nə́dėkᴜ | *let us not go* |
| zázi gə́dėkᴜ | *you all didn't go* | bâ·mí· sdʸėkᴜ | *don't go (you all)* |
| zázi zėkᴜ | *they didn't go* | bâ·mí· pėkᴜ | *let them not go* |

| DUBITATIVE | | FUTURE HORTATIVE | |
|---|---|---|---|
| tə́dėkᴜ | *maybe we went* | ba nə́dėkᴜ | *let us go (in the future)* |
| dʸídėkᴜ | *maybe you all went* | ba dʸídėkᴜ | *go (you all)* |
| dėkᴜ | *maybe they went* | ba pėkᴜ | *let them go* |

### CLASS 11–26

Class 11–26 verbs differ from those of Class 11–25 in that they occur with allomorphs 104O and 105O in the first person hortative and negative hortative:

| | |
|---|---|
| stéˀèyᴜ | *let us two go* |

### CLASS 12–27

| INDICATIVE | | HORTATIVE | |
|---|---|---|---|
| sgâ·nawańɪ | *I am mean* | nə́ẓâ·nawańɪ | *let me be mean* |
| gə́ẓâ·nawańɪ | *you are mean* | ẓâ·nawańɪ | *be mean* |
| ċâ·nawańɪ | *he is mean* | ṗê·nawańɪ | *let him be mean* |

| NEGATIVE | | NEGATIVE HORTATIVE | |
|---|---|---|---|
| zázi sč̇â·nawańɪ | *I am not mean* | bâ·mí· nə́ẓâ·nawańɪ | *let me not be mean* |
| zázi gə́ẓâ·nawańɪ | *you are not mean* | bâ·mí· sč̇â·nawańɪ | *don't be mean* |
| zázi ċâ·nawańɪ | *he is not mean* | bâ·mí· ṗê·nawańɪ | *let him not be mean* |

| DUBITATIVE | | FUTURE HORTATIVE | |
|---|---|---|---|
| tə́ẓâ·nawańɪ | *maybe I am mean* | ba nə́ẓâ·nawańɪ | *let me be mean (in the future)* |
| dʸə́ẓâ·nawańɪ | *maybe you are mean* | ba dʸə́ẓâ·nawańɪ | *be mean* |
| ṫâ·nawańɪ | *maybe he is mean* | ba ṗê·nawańɪ | *let him be mean* |

### CLASS 13–28

| INDICATIVE | | HORTATIVE | |
|---|---|---|---|
| sk̇ùikᴀɪ | *I lay down* | nə́dìkᴀɪ | *let me lie down* |
| gə́dìkᴀɪ | *you lay down* | dìkᴀɪ | *lie down* |
| ċìkᴀɪ | *he lay down* | ṗìkᴀɪ | *let him lie down* |

| NEGATIVE | | NEGATIVE HORTATIVE | |
|---|---|---|---|
| zázi sč̇ìkᴀɪ | *I didn't lie down* | bâ·mí· nə́dìkᴀɪ | *let me not lie down* |
| zázi gə́dìkᴀɪ | *you didn't lie down* | bâ·mí· sč̇ìkᴀɪ | *don't lie down* |
| zázi ċìkᴀɪ | *he didn't lie down* | bâ·mí· ṗìkᴀɪ | *let him not lie down* |

### DUBITATIVE

| | |
|---|---|
| tə́dìkᴀɪ | *maybe I lay down* |
| dʸídìkᴀɪ | *maybe you lay down* |
| ṫìkᴀɪ | *maybe he lay down* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba nə́dìkᴀɪ | *let me lie down (in the future)* |
| ba dʸídìkᴀɪ | *lie down* |
| ba ṗìkᴀɪ | *let him lie down* |

## CLASS 14–4

### INDICATIVE

| | |
|---|---|
| sî·çᴀ | *I did it* |
| šî·çᴀ | *you did it* |
| cî·çᴀ | *he did it* |

### HORTATIVE

| | |
|---|---|
| kâiçᴀ | *let me do it* |
| pî·çᴀ | *do it* |
| píˀî·çᴀ | *let him do it* |

### NEGATIVE

| | |
|---|---|
| zázi sčî·çᴀ | *I didn't do it* |
| zázi šî·çᴀ | *you didn't do it* |
| zázi cî·çᴀ | *he didn't do it* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· kâiçᴀ | *let me not do it* |
| bâ·mí· sčî·çᴀ | *don't do it* |
| bâ·mí· píˀî·çᴀ | *let him not do it* |

### DUBITATIVE

| | |
|---|---|
| tî·çᴀ | *maybe I did it* |
| cî·çᴀ | *maybe you did it* |
| tî·çᴀ | *maybe he did it* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba nî·çᴀ | *let me do it (in the future)* |
| ba cî·çᴀ | *do it* |
| ba píˀî·çᴀ | *let him do it* |

## CLASS 14–19

### INDICATIVE

| | |
|---|---|
| ṡî·ẓa·ṅᴇ | *we did it* |
| šî·ẓa·ṅᴇ | *you all did it* |
| cî·ẓa·ṅᴇ | *they did it* |

### HORTATIVE

| | |
|---|---|
| ṅî·ẓa·ṅᴇ | *let us do it* |
| pî·ẓa·ṅᴇ | *do it (you all)* |
| píˀî·ẓa·ṅᴇ | *let them do it* |

### NEGATIVE

| | |
|---|---|
| zázi sčî·ẓa·ṅᴇ | *we didn't do it* |
| zázi šî·ẓa·ṅᴇ | *you all didn't do it* |
| zázi cî·ẓa·ṅᴇ | *they didn't do it* |

### NEGATIVE HORTATIVE

| | |
|---|---|
| bâ·mí· ṅî·ẓa·ṅᴇ | *let us not do it* |
| bâ·mí· sčî·ẓa·ṅᴇ | *don't do it (you all)* |
| bâ·mí· píˀî·ẓa·ṅᴇ | *let them not do it* |

### DUBITATIVE

| | |
|---|---|
| tíˀî·ẓa·ṅᴇ | *maybe we did it* |
| cî·ẓa·ṅᴇ | *maybe you all did it* |
| tî·ẓa·ṅᴇ | *maybe they did it* |

### FUTURE HORTATIVE

| | |
|---|---|
| ba ṅî·ẓa·ṅᴇ | *let us do it (in the future)* |
| ba cî·ẓa·ṅᴇ | *do it (you all)* |
| ba píˀî·ẓa·ṅᴇ | *let them do it* |

## CLASS 14–20

Class 14–20 verbs differ from those of Class 14–19 in that they take allomorphs 104Q and 105Q in the first person hortative and negative hortative:

| | |
|---|---|
| sṫî·ẓa·ṅᴇ | *let us two do it* |

# APPENDIX 2. TEXT [7]

D P S D
díʔái[1] ṣu ʔe hauʔ[2] dáʔȧċɪ[3] sandiyâ·kᴜ[4] / ʔai ṣu ʔe ṣu há·di[5]
there near he arrived St. James where

S I P C
čí·ná[6] dʸə́·ṫâ·mᴀ[7] / zázi[8] ʔíṫe[9] dʸúṁⱻ[10] / ṣu ʔe ṫa[11]
river it is full not able to he crosses thus

P D O
ṣu ču̇idá·ʔanikᴜyᴀ[12] dúk̇é·[13] dʸi[14] / ṣu ʔeu ṣu sə́ẓáṅȧisdʸᴜšᴇ[15]
he was asking that way up Our Father

P I D O
ču̇idá·ʔanikᴜyᴀ[12] / gúẇa·[16] ʔéza[17] dúk̇é·[13] ku[18] ċícɪ[19] gə́·ṫâ·mᴀ[20]
he was asking how at least that way south water it is full

P A D O
níuṁⱻ[21] gúṅᴇ[22] / ʔe ṣu ʔe yúsí[23] ṅə[24] ʔeu[25] d ʸá·mí[26]
will cross he from there down eagle

D P D P
ʔeu ṣu ʔe yúsí[23] ṅə[24] ṫȧgúyaṅᴇ[27] / ṣu ʔe hauʔ[2] díuẇáċɪ[28] /
from there down he was sent near he approached

P I fragment P P
ṣu ʔe ʔe dȧcɪkᴜyᴀ[29] / zi[30] háidí[31] ẏu·[32] / ha·[33] / dʸéiṅeṫᴀ[34] / ṣȧċípᴀ[35]/
he said to him what which maybe yes he said I need you

I P A fragment P S
ẏu·[32] níudʸâ·waʔ[36] çu[37] / ṣu ʔe hê·ṁé·[38] / dʸéiṅeṫᴀ[34] ʔeu[25]dʸá·mí[26] /
maybe will be of use you all right he said eagle

fragment P D A D
ṣu ʔe hiṅá[39] ʔégu[40] / nə́déʔèyᴜ[41] dísí[42] ku[18] súẓú·ʔᴜ[43] / há·di[5]
O.K. then will go there south we two where

S D P A S
hiɢâ·ntɪ[44] dʸâ·ṁᴀ[45] / ʔeu ʔai hauʔ[2] nə́déʔèyᴜ[41] súẓú·ʔᴜ[43] / gasî·kɪ[46]
giant his home near will go we two king

O P P A
k̇âuk̇ui[47] ʔeu ṫu[48] zíwiçᴀ[49] / ʔeu ṣu ṅíẏêiba·nətɪ[50] súẓú·ʔᴜ[43] /
his wife he lost will look for we her

---

[7] Superior numbers in Indian text are explained on pages 163-164.

| S | P | fragment | P |
|---|---|---|---|
| ṣu ʔe ʔeu dʸá·mí[26] | ʔe č̇áza[51] / | hiṅá[39] / | dʸéiṅeṫᴀ[34] / |
| eagle | he said | O.K. | he said |

| fragment | D | P | D |
|---|---|---|---|
| ṣu ʔe dúẇé·[52] ʔégu[40] ṣu / | ṧétɪdʸᴀ[53] ʔai dʸi[14] | č̇úgúyᴀ[54] / | ṣu ʔe ʔai dʸi[14] |
| this way then | my back up | sit | up |

| P | S | D | P |
|---|---|---|---|
| čúgúyᴀ[55] | ʔeu[25] sandiyâ·kᴜ[4] / | ṣu ʔe dísí[42] ku[18] | ṣu ʔe ṣu dʸáʔáiẏᴜ[53] / |
| he sat | St. James | there south | they flew |

| D | P | D | P |
|---|---|---|---|
| ṣu ʔe dʸi[14] | déʔèyᴜ[57] / | ṣu ʔe dʸi[14] há·di[5] | ṣu déʔé·yaʔaṫanᴇ[58] / |
| up | they went | up where | they were going |

| P | D | S |
|---|---|---|
| ṣu ʔe ṣu dʸùkᴀčᴀ[59] / | ʔai ṅə[24] ʔeu[25] | č̇áʔá·sṫi·çᴀ[60] hiɢâ·ntɪ[44] / |
| he saw it | down | his city giant |

| P | S | O | P |
|---|---|---|---|
| ṣu ʔe ṣu dʸùkᴀčᴀ[59] | /ṣu ʔe čėcɪ[61] ṣu hiɢâ·ntɪ[44] | dʸá·mí[26] | č̇ádʸá·še[62] / |
| he saw it | also giant | eagle | his |

| P | D | P |
|---|---|---|
| ṣu ʔe ṣu čáʔáudʸᴜ[63] | /ṣu ʔe ṣu dʸi[14] | dígâ·nikᴜyᴀ[64] |
| he knew | up | he was looking |

| S | S |
|---|---|
| čėcɪ[61] hiɢâ·ntɪ[44] č̇ádʸá·še[62] / | ṣu ʔe ṣu ʔeu hiɢâ·ntɪ[44] č̇ádʸá·še[62] dʸá·mí[26] |
| also giant his | giant his eagle |

| P | S | P | P |
|---|---|---|---|
| ṣu ʔe dʸú·sč̇ècᴀ[65] / | ṣu ʔe hiɢâ·ntɪ[44] | čáká·[66] / | ṣu ʔe dʸúṁɜ[10] |
| he cried out | giant | he heard | he came out |

| S | O | P | fragment |
|---|---|---|---|
| hiɢâ·ntɪ[44] | ṣu ʔe ʔeu du[67] dʸá·mí[26] | ʔe ṫáʔáṅᴇyᴀwᴀ[68] / | hiṅá[39] ʔégu[40] / |
| giant | this eagle | he was commanded | O.K. then |

| P | P | S | D |
|---|---|---|---|
| č̇û·wasɪ[69] / | ṣu ʔe čáʔâuwasɪ[70] | ʔeu dʸá·mí[26] / | ṣu ʔe ṣu hauʔ[2] |
| attack | he attacked | eagle | near |

P P S

ṣu dáˀáċinu· [71] / ˀai ṣu čáẇáiṅɪyᴀ [72] / ˀe ṣu ˀeu sandiyâ·kᴜ [4]

he arrived they fought St. James

O P

hìsgai [73] dʸáučᴜ [74] /

knife he had

ˀeu ṣu ˀe ṣu hé·ẏ́á-ši ṣu ˀe ˀeu du hɪɢâ·ntɪ č̓ádʸá·še-ši dídʸáwᴀ/díˀái

with it this giant his (eagle) he stabbed there

ṣu ˀe ṣu čáˀàudapɜ-dʸanu / ṣu ˀe yúẇé· ṅə ṣu ˀe dʸû·ẓa·č̓ᴀ ˀeu du

they killed him this way down he fell this

hɪɢâ·ntɪ dʸá·mí č̓ádʸá·še / ṣu ˀe ˀáisí ṣu ˀe ṣu déˀèyᴜ / ṣu ˀe ṣu

giant eagle his there they went

há·di ṅə yúẇé· ṣu ˀe nədéˀèyᴜ ˀeu ˀai há·di hɪɢâ·ntɪ dʸâ·ṁᴀ

where down this way will go where giant he dwells

sč̓áˀá·sṫi·ç̣ᴀ / ˀáisí dʸâ·ṁᴀ / ṣu ˀe ˀai ʙendá·na dʸáwiẓaṅɪṣᴜ / ˀeu

city there he dwells window he was there

ˀáisí dʸi dʸá·mí ṣu ˀe čúgúyᴀ / ṣu ˀe ˀeu sandiyâ·kᴜ čècɪ ṣu yúk̓ᴜ

there up eagle he sat St. James also away

ṅə čúgúyanu· / ṣu ˀe ˀáisí dʸi čúgúyᴀ / ṣu ˀe ˀeu du sandiyâ·kᴜ

down he sat there up he sat this St. James

dʸá·mí háẇé· ṫíyú·ᴢé·yánᴇ ˀe dȧcɪkᴜyᴀ / dísí ba č̓úyû·k̓ᴀᴍɪ/

eagle this way he lead he said to him here future wait for me

há·ṅé dúk̓é· kàigá / ṣu ˀe hiṅá dʸéiṅeṫᴀ ˀeu dʸá·mí /

let me there look O.K. he said eagle

ṣu ˀe yúk̓é· ṣu ˀe háẇé· ṣa dígâ·nikᴜyᴀ ˀeu sandiyâ·kᴜ / yúk̓é·

that way this way around he looked St. James that way

ħáẇé· dígâ·nikᴜyᴀ / háẇé· ʙendá·na ṣa ṅə číṅésɜ / ṣu ˀe zázi

this way he looked this way window around down he peered not

ˀíṫe dʸúbənu· / ˀégəskᴜ ˀeu sai dáˀâ·ˀᴀ zi ċíṁᴀsč̓êiç̣ᴀ-ši / ˀeu

able to be entered but all it is shut thing iron with

ṣu ˀe ṫa ṣu ˀe ˀeu ˀai há·di / hauˀ dáˀáċɪ ˀeu ˀai há·di č̓âuk̓ui-ṣanu

thus where near he came where his wife

gasî·kɪ ˀai dʸȧkᴜ / ṣu ˀe ˀeu dʸá·še ˀe ṣu ˀe dìṣaç̣ᴀ / ṣu ˀe

king she was her name he called

čȧisk̓ə·ˀɜçᴀɪ ˀeu gasî·kɪ č̓âuk̓ui-ṣanu / he dʸéiṅeṫᴀ / ṣu ˀe ˀeu
she turned king his wife what she said

ṣáiẏ̓êiba·tᴇ híṣᴜ / gəẓá·ẓə́ ˀeu sk̓úyanikᴜyᴀ dúẇé· si ˀúdî·ye /
I look for you you your husband he told me this way back to get

ṣu ˀe ˀe dʸéiṅcṫᴀ / ˀeu he / ˀégu gúẇa· sa níuṁɜ si / hiɢâ·ntɪ
she said all right then how back will get out I giant

ˀáˀá·ṫáwɪ yúk̓é· yuˀ há·di dʸåkᴜ / ˀeu nu· káˀá·tᴇyᴀ /
key that way there where it is only he has

zázi hínᴜ skáˀá·tᴇyᴀ / gúẇa· ˀégu sa núẓû·ṁɜ / ṣu ˀe ˀeu gasî·kɪ
not I I have how then back will get out king

č̓âuk̓ui-ṣanu ˀe č̓áza / dúwái dúsí néˀéċɪ gu k̓úiṁí háċᴜ ṁàgu/
his wife she said this way will come he in a little while

ḣáẏ̓éi ba há·di č̓úisguṁᴀšᴀ / dúsí záˀáċinu· / ˀe ṣu há·ẇíná náudʸᴜ
there future somewhere hide back he arrives right away will know

gu / ṣu ˀe hiṅá dʸéiṅeṫᴀ / ṣu ˀe ˀeu si yúk̓ᴜ zùdʸᴜ ṣu yúˀái há·di
he O.K. he said back away he went there somewhere

čủisguṁᴀšᴀ / ṣu ˀe ṣu dúẇé· ṣu si č̓â·ničᴀdʸᴀyᴀ / ˀésgəskᴜ ṅə kášanu·/
he hid this way back he was coming but down he stepped

ṣu ˀe ṣu háˀáċi· wək̓əwək̓ədʸᴀ/ṣu ˀemí ṣu čáˀáudʸᴜ/mmm dʸéiṅeṫᴀ/
earth it shook already he knew he said

hau diˀ zi gåkᴜ / dʸéiṅeṫᴀ ˀeu hiɢâ·ntɪ / ṣu ˀe ˀeu gasî·kɪ
who here thing he is he said giant king

č̓âuk̓ui-ṣanu ˀe č̓áza / zázi há·di hau gåkᴜ gu zázi há·di hau
his wife she said not somewhere who he is and not somewhere who

skáˀàtɪšaniguyaṅɜ-di / ṣu ˀe ˀeu gasî·kɪ č̓âuk̓ui-ṣanu hiɢâ·ntɪ
we talk to each other king his wife giant

ˀe dȧcɪkᴜyᴀ / mí·ná ṩásbanaṣuṁanu· / ẏ̓u· dʸídíč̓áyuṁᴀ /
she said to him let me I wash your head maybe you are tired

mí·ná ṩásbanaṣuṁanu· /ṣu ˀeẏ̓u· méˀé· núẏ̓úċɪdʸi·cᴀ ọu ráwá· /
let me I wash your head maybe thus will rest you good

gu ní·baˀtᴜ ọu / ṣu ˀe hiṅá ˀégu / dʸéiṅeṫᴀ ˀeu hiɢâ·ntɪ / ṣu ˀe ˀeu ṣu
and will sleep you O.K. then he said giant

čáˀâuwɪspa·ziwitᴀ ˀai du gasî·kɪ č̓âuk̓ui-ṣanu / ṣu ˀe ṣu háik̓ᴜ ṣu
she made suds this king his wife when

ṫáˀásbanaṣuṁaṅᴇ / ˀeu du higᴀ̂·ntɪ ˀeu ṫáˀásba naṣuṁaṅᴇ /
his head was washed this giant his head was washed

ṣu ˀe ṣu dí·baˀtᴜ / ṣu ˀe ˀeu du gasî·kɪ č̓âuk̓ui-ṣanu ṣu ˀe ˀeu
he slept this giant his wife

dʸùbéucᴀ sandiyâ·kᴜ / dúẇé· ṣu gàitɪ si ˀí·ma / ṣu zí·baˀtᴜ / ṣu ˀe
she called St. James this way come on back come he sleeps

ˀeu ˀai ṣu ˀe díube·tᴀ / ṣu ˀeu yúk̓é· k̓ú·tí ˀe zùpe· / yúˀái há·di
she told him there mountain go there where

dʸi ˀeu dʸáwâ·ˀᴀ / ˀáisí cá·cadʸᴀ ˀeu / gu ˀeu ˀáisí dʸáwínᴜska·tɪ /
up he kept them there he breathes and there his hearts

dʸû·mí· ˀáisí dʸáwínᴜska·tɪ / du ˀískᴀ ˀeu hé·ẏá cá·ca·dʸani /
two there his hearts this one with it he breathes

gu du ˀískᴀ ˀeu hé·ẏá tíšá·tɪ-šé / ṣu ˀe ˀeu ṫa ˀai ṫáˀàbeˀeṅᴇ
and this one with it he has power thus he was told

ˀeu du sandiyâ·kᴜ / du dʸasî·kɪ č̓âuk̓ui-ṣanu ˀe č̓áza / ˀésgəskᴜ ˀai
this St. James this king his wife she said but there

gáukᴜ mû·k̓aiçᴀ / ˀai ċâ·nawaṅɪ mídʸu· / ˀeu ˀai gúwa·sdʸᴜ / ṣu ˀe ˀeu
he has mountain lion he is mean very there he watches

sandiyâ·kᴜ ˀe č̓áza / hê·ṁé· ˀe zû·ne si / ṣu ˀe sa dʸúṁənu· /
St. James he said all right will go I back he left

ṣu ˀe ˀai ṣu ˀe ṣu ˀeu dʸá·mí ṫíyú·zé·yánᴇ / ˀai ṣu ˀe čáˀàtɪšaniguyaṅⱻ /
eagle he lead they talked together

ṣu ˀe ˀe dȧcɪkᴜyᴀ dʸá·mí/dúẇé· ˀégu ṣu na ṣu stéˀèyᴜ/ṣu ˀe sa
he said to him eagle this way then let's go let's go back

dʸi čúgúyanu· / ṣu ˀe ˀáisí yúk̓é· dʸaˀáiẏᴜ yúˀái há·di ˀeu č̓ú·tí /
up he sat there that way they flew there where mountain

ṣu ˀe há·di ṅə zíyá· bə ṅə čúgúyaṅⱻ diˀ-dʸanu ṣu ˀe ṣu / ˀésgəskᴜ
where down below west down they sat here but

ṣu ˀe ˀemí dí·ẏùkačᴀ kauˀ zi mû·k̓aiçᴀ / ṣu ˀemí dí·ẏùkᴀčᴀ /
already he saw them something mountain lion already he saw them

ṣu ˀe ṣu ˀai ṣu yúk̓ᴜ ṅə čúgúyᴀ ˀeu sandiyâ·kᴜ / ṣu ˀe ˀáisí ha·
away down he sat St. James from there east

nú·yú·k̓â·ni/ˀe zùdʸᴜ/ṣu ˀe ṣu dʸùkᴀčᴀ ˀeumû·k̓aiçᴀ/ hauˀ ṣu há·ni
himself he walked he went he saw him mountain lion near from the east

č̓â·ničᴀdʸᴀyᴀ / ṣu ˀeu yuˀ zi kúċayawane ṁe· / k̓a háẓánɪ dʸi gáˀᴀṣúné
he was walking there thing he was mad like his hair up it stood

ˀe ṣu ˀe/háẇé·č̓â·ni/ṣu ˀe ṣu ˀeṁí sandiyâ·kᴜ čėcɪ ṣu há·k̓ᴜ dʸáwiẓa·ṅɪ
this way he walked already St. James also ready he had prepared

hìsgai-ši / ṣu ˀe ˀísgawa ˀai ṣu ˀe ṣu čùdʸàdʸɪ / ṣu ˀe ˀeu díubeˀene
knife both they fought she told him

du gasî·kɪ č̓âuk̓ui-ṣanu ˀeu ˀáisí dʸû·mí· gáwínᴜska·tɪ-šé / ˀe ṣu ˀe
this king his wife there two his hearts

ṣu ˀe čáˀàudanu· mû·k̓aiçᴀ / ˀai ṣu ˀe dʸi čútɪká·šᴀ / ṣu ˀe ˀai
he killed it mountain lion up he climbed

dʸú·ˀùkᴀčᴀ ˀeu ṅáwiˀik̓ᴀ háẇé· dʸi dʸáˀàkᴜ / ˀai ṣu ˀe ˀískᴀ
he saw them eggs this way up they sat one

čáˀáuċáyᴜcᴀ gu ˀískᴀ čáˀáubənaiṁanu· / ṣu ˀe yúsí ṅə zùdʸᴜ /
he broke it and one he put in his pocket from there down he went

ṣu ˀe ˀai háusá dáˀáċɪ/ ˀeu ˀai há·di si díyû·k̓ᴀmɪ / dʸá·mí hé·ẏá
back he arrived where back he waited eagle with it

č̓â·ničᴀdʸayane / ṣu ˀáisí sa dʸi čúgúyanu· / ṣu ˀe ṣu yúsí déˀèyᴜ /
he was going there back up he sat from there they went

ˀésgəskᴜ ṣu ˀemí yuˀ ˀe gúẇa· gasî·kɪ č̓âuk̓ui díubeˀene / ṣu ˀemí
but already there how king his wife she told him already

hiɢâ·ntɪ ṣu díwa·sa yuˀ ˀe / ṣu ˀe háusá dáˀáċɪ / ˀai ṣu ˀe ṅə
giant he was sick there back he arrived down

čúgúyanu· ṣu ˀe ṣu / ṣu čėcɪ díyû·k̓ᴀmɪ gasî·kɪ č̓âuk̓ui-ṣanu / ṣu ˀe
he sat also she waited king his wife

háusá dáˀáċinu· / ṣu ˀe ṣu dìubéucᴀ ṣu ˀe / ṣu gàitɪ dúẇé· ˀúpᴈ /
back he arrived she called him come on this way enter

dác̓ɪkᴜyᴀ / ṣu gàitɪ há·ṅé / ˀa si cíyùcᴇ / ha· dʸéiṅet̓ᴀ /
she said to him come on question back you brought yes he said

si ċíyùcᴇ / haẇí· / ṣu ˀe ˀai t̓áˀàudiˀ-dʸanu / ṣu ˀe yúk̓é· ˀeu
back I brought here it was given there

ˀísgawa ˀe déˀèyᴜ ṣu / ṣu díwa·sa / ṣu ˀe ṣu ˀe dác̓ɪkᴜyᴀ /
both they went he was sick he said to him

dʸi ṣánásgái ˀe pî·çᴀ / dác̓ɪkᴜyᴀ / ṣu ˀe t̓a dʸi tî·ẓane / ṣu ˀe
up your head do it he said to him thus up he did

ˀai ṅə dʸùsč̇aċɪcᴀ ˀeu / ṣu ˀe ˀai ṫáˀámudʸᴜzaṅᴇ ˀeu du higᴀ̂·ntɪ/
down he burst he was killed this giant
ṣu ˀe ṣu gasî·kɪ č̇âuk̓ui-ṣanu gu sandiyâ·kᴜ ṣu yúẇé· / ṣu ˀe ˀáisí
king his wife and St. James this way there
dʸi ˀísgawa čúgúyaṅədi·-dʸanu / ṣu ˀe ˀáisí sa dėkᴜ há·di gasî·kɪ
up both they sat there back they went were king
dʸâ·ṁᴀ / ṣu ˀe sandiyâ·kᴜ k̓ámȧkɘ gasî·kɪ ṫíwak̓uic̣ᴀ / háidí
he lived St. James his daughter king he married which one
gasî·kɪ díẏá·ˀáṅi-šé / ṫa yu̇pé· sč̇ᴀ /
king he promised thus story

## FREE TRANSLATION

St. James arrived at the ocean and was not able to cross. So he asked God how he might cross the ocean. Then an eagle was sent down from above.

The eagle approached and said, "What is it?" "Yes," he said, "I need you. Maybe you will be of use." "All right," said the eagle. "O.K., then, we will go south to the giant's house. The king lost his wife. We are going to look for her." "O.K.," said the eagle, "come sit on my back." Then St. James got on. Then they flew south and up they went. As they were flying up there they saw the giant's city down below. The giant also had an eagle and he knew what was happening.

The giant's eagle looked up and cried out. Then the giant heard and came out. "O.K., attack!", he commanded his eagle. So the eagle attacked. When he came near they began fighting. St. James had a knife and with it stabbed the giant's eagle. They killed the giant's eagle and down he fell! Then they went down to the city where the giant lived. The eagle perched on the window of the giant's house and St. James got off and sat down. Then St. James said to the eagle who had taken him there, "Wait for me here. Let me look around." "O.K.," said the eagle.

So St. James looked around this way and that. He peered through the window but he could not get in. It was shut with iron bars. Then he came to where the king's wife was. He called her name and she turned around. "What is it?" she said. "I'm looking for you.

Your husband told me to come and get you." "All right," she said, "but how will I get out? The giant has the only key somewhere. I don't have any. How will we get out, then? He will come back in a little while. Hide somewhere. When he comes back he will know right away what is going on." "O.K.," he said, and he went and hid somewhere. The giant was coming back and as he stepped the earth shook. He already knew, and he said, "Hmmm! Who is here?" Then the king's wife said, "Nobody is here and there is nobody talking with me." The king's wife then said to the giant "Let me wash your head. Maybe you are tired. Let me wash your head and then maybe you will rest well and go to sleep." "O.K., then," said the giant. Then the King's wife made suds. When his head was washed the giant went to sleep. Then the king's wife called to St. James, "Come here; he is asleep." Then she told him, "Go to the mountains. He keeps them there. There he breathes and there he has his two hearts. He breathes with one, and with one he has power." Thus it was told to St. James. The king's wife said, "But he has a mountain lion there watching who is very mean." Then St. James said, "All right, I'll go." So he left and talked with the eagle who had led him. Then the eagle said to him, "Come on, let's go." So he got back on and they flew away to the mountains. Then they landed down on the west side, but the mountain lion had already seen them.

Then St. James got off and walked on eastward alone. The mountain lion saw him and approached from the east. He was mad and his hair stood up as he approached. St. James had his knife ready and the two of them fought. The king's wife had told him where the two hearts were, so he killed the mountain lion and climbed up. He saw two eggs sitting there. Then he broke one of them, put one in his pocket and climbed back down.

Then he arrived back where the eagle was waiting. He got back on and from there they returned according to the instructions of the king's wife. The giant was already sick when he got back and dismounted. The king's wife, too, was waiting. "Come on in," she called to him, "did you bring it back?" "Yes," he said, "here it is." And he gave it to her. Then they both went to the sick one. He said to him, "Lift up your head." Then he lifted it up and burst. So the giant was killed. Then the king's wife and St. James got on the eagle and they went back to the king's house. And St. James married the king's daughter that he had promised to him. That is the story.

## EXPLANATION OF NUMBERS IN TEXT

1. Preposition, *there.*
2. Preposition, *near.*
3. Verb, *he arrived.* Affix 123G + stem, -áˀáč̓ɪ.
4. Referential, *St. James.* From Spanish *Santiago.*
5. Preposition, *where, somewhere.*
6. Referential, *river.*
7. Verb, *it is full.* Affix 123A + stem, -ə́·t̓á + affix 403.
8. Modal, *not.*
9. Modal, *able to.*
10. Verb, *he emerged* or, in this context, *he crosses over.* Affix 123A + stem, -úm̓ɜ.
11. Connective, *thus.*
12. Verb, *he was asking.* Affix 123C + stem, -u̓idá·ˀᴀ + affix 401B.
13. Preposition, *that way.*
14. Directional, *up.*
15. Verb, *our father.* Affix 101G + stem, -án̓a̓isdʸᴜ + affix 501I.
16. Interrogative, *how?*
17. Modal, *at least.*
18. Directional, *south.*
19. Referential, *water.*
20. Verb, *it is full.* Same as 7 but with affix 121A instead of 123A.
21. Verb, *will emerge* or *cross over.* Same as 10 but with affix 201B instead of 123A.
22. Verbal auxiliary, third person subject with condition suffix.
23. Preposition, *from there, from afar.*
24. Directional, *down.*
25. Particle which in certain contexts adds emphasis to other words.
26. Referential, *eagle.*
27. Verb, *he was sent.* Affix 123H + affix 302B + stem, -águyᴀ + affix 502A.
28. Verb, *he approached.* Affix 123B + stem, -úw̓áč̓ɪ.
29. Verb, *he said to him.* Affix 123G + stem, -a̓cɪkᴜyᴀ.
30. Interrogative, *what?*
31. Interrogative, *which?*
32. Modal, *maybe.*
33. Exclamation, *yes.*
34. Verb, *he said.* Affix 123A + stem, -áin̓et̓ᴀ.
35. Verb, *I need you.* Affix 141B + stem, -íc̓ípᴀ.
36. Verb, *will be of use.* Affix 201B + stem, -údʸá·waˀ.
37. Verbal auxiliary, second person subject.
38. Exclamation, *all right, that will do.*
39. Exclamation, *O.K.*
40. In some contexts a connective; here part of an exclamatory phrase.
41. Verb, *will go* (dual subject). Affix 201G + stem, -éˀèyᴜ.
42. Preposition, *there.*
43. Verbal auxiliary, first person dual subject.
44. Referential, *giant.* From Spanish *gigante.*
45. Verb, *he lives, his house.* Affix 123A + stem, -â·m̓ᴀ.
46. Referential, *king.* From Spanish *cacique.* May be alternatively analyzed as a verb consisting of affix 121A + stem, -asî·kɪ.
47. Verb, *his wife.* Affix 121D + stem, -âuk̓ui.
48. Particle which modifies meaning of following verb.
49. Verb, *he did it,* or, in this context with the particle t̓u, *he lost.* Affix 121G + stem, -íwiçᴀ.

50. Verb, *will look for* (dual subject). Affix 201D + stem, -íy̓êipᴀ + affix 501B.
51. Verb, *he said.* Affix 123D + stem, -áza.
52. Preposition, *this way.*
53. Verb, *my back.* Affix 101E + stem, -átɪdʸᴀ.
54. Verb, *sit* (imperative). Affix 114D + stem, -úgúyᴀ.
55. Verb, *he sat.* Same as 54 but with affix 123C instead of 114D.
56. Verb, *they two flew.* Affix 123A + stem, -áˀáiy̓ᴜ.
57. Verb, *they two went.* Same as 41 but with affix 123G instead of 201G.
58. Verb, *they were going.* Affix 123G + stem, -éˀé·yaˀat̓ᴀ + affix 402B.
59. Verb, *he saw him* (or *it*). Affix 123A + stem, -ùkᴀčᴀ.
60. Verb, *his city.* Affix 123D + stem, -áˀá·st̓i·ç̣ᴀ.
61. Particle, *also.*
62. Verb, *his* (referring to a living animal). Affix 123D + stem, -ádʸá·še.
63. Verb, *he knew.* Affix 123F + stem, -áudʸᴜ.
64. Verb, *he was looking.* Affix 123G + stem, -ígá + affix 401B.
65. Verb, *he cried out.* Affix 123A + stem, -ú·sč̓èᴄᴀ.
66. Verb, *he heard.* Affix 123C + stem, -áká·.
67. Pronoun, *this one.*
68. Verb, *he was commanded.* Affix 123H + affix 302A + stem, -án̓ᴇyᴀ + affix 502G.
69. Verb, *attack* (imperative). Affix 114D + stem, -âuwasɪ.
70. Verb, *he attacked.* Same as 69, but with affix 123F rather than 114D
71. Verb, *he arrived.* Affix 123G + stem, -aˀác̓ɪ + affix 602.
72. Verb, *they fought.* Affix 123C + stem, -áw̓áin̓ɪyᴀ.
73. Referential, *knife.*
74. Verb, *he had.* Affix 123A + stem, -áučᴜ.

# APPENDIX 3. VOCABULARY

## UNINFLECTED WORDS

| | | |
|---|---|---|
| 1. | ˀa | *interrogative particle* |
| 2. | ˀai | *there* |
| 3. | ˀáičástɪ | *mattress, mat* |
| 4. | ˀáčínɪ | *house* |
| 5. | ˀádàušɪ | *cooking pot* |
| 6. | ˀá·dʸá·ṅɪ | *tether* |
| 7. | ˀáugubáˀak̓ácɪ | *nail* |
| 8. | ˀánámátɪ | *seat* |
| 9. | ˀánáiẓáṅɪ | *lamp* |
| 10. | ˀáṅé· | *tasty* |
| 11. | ˀá·sá | *large bowl* |
| 12. | ˀáisí | *there* |
| 13. | ˀáisč̇aẓáṅɪ | *trousers* |
| 14. | ˀáṣání | *grass* |
| 15. | ˀáṣánɪ | *wheat* |
| 16. | ˀáˀá·ṫáwɪ | *key* |
| 17. | ˀá·wá·ṅɪ | *grinding stone, metate* |
| 18. | ˀe | *and* |
| 19. | ˀeu | *narrative particle and emphasizer* |
| 20. | ˀégu | *then, therefore* |
| 21. | ˀemí | *already* |
| 22. | ˀésgəskᴜ | *but* |
| 23. | ˀìbánɪ | *Cholla cactus* |
| 24. | ˀí·č̇ánání | *bark* |
| 25. | ˀìdʸawa | *centipede* |
| 26. | ˀí·k̓ani | *vine* |
| 27. | ˀíˀínâ·ni | *liver* |
| 28. | ˀíṅáwí | *flour* |
| 29. | ˀìsa | *manure* |
| 30. | ˀísdúwa | *arrow* |
| 31. | ˀísgawa | *both* |
| 32. | ˀískᴀ | *one* |
| 33. | ˀíṣâ·ni | *meat* |
| 34. | ˀìṣá | *porcupine* |
| 35. | ˀíṣaṫɪ | *lard* |
| 36. | ˀíṫe | *able to* |
| 37. | ˀíyâ·ni | *life* |
| 38. | ˀú·basdʸáṅɪ | *legging* |
| 39. | ˀúbéwí | *food* |
| 40. | ˀú·bə́·ná | *needle* |
| 41. | ˀú·dídʸúwísṫɪ | *saddle* |
| 42. | ˀúgupáwaṅɪ | *ax* |
| 43. | ˀúkú·yáṁɪ | *earring* |
| 44. | ˀú·k̓áyáwí | *towel, handkerchief* |
| 45. | ˀú·má·cɪ | *help, assistance* |
| 46. | ˀú·mú·cɪ | *gun* |
| 47. | ˀú·síwísdʸáṅɪ | *rope* |
| 48. | ˀú·sk̓áicɪ | *bell* |
| 49. | ˀúṣâ·c̣ᴀ | *sun* |
| 50. | ˀú·ṫá·ṅɪ | *basket* |
| 51. | ˀúwàkᴀ | *baby, doll* |
| 52. | ˀúwáisṫáṅɪ | *bowl* |
| 53. | ˀú·wísgícɪ | *match* |
| 54. | ˀúyáumbúmcɪ | *drum* |
| 55. | ˀúẓústɪ | *drill* |
| 56. | ˀə́rə́· | *hot (in reference to the weather)* |
| 57. | ba | *future hortative particle* |
| 58. | bá·bȧ | *grandparent* |
| 59. | bàtɪ | *whitewash* |
| 60. | bê·ṙakᴀ | *toad* |
| 61. | bíší·ná | *purple* |
| 62. | bî·ṣᴜ | *bee* |
| 63. | bíyá· | *tilted, lopsided* |
| 64. | búmú·ná | *torso, ribs* |
| 65. | bú·ṙàikᴀ | *butterfly* |
| 66. | búẓuẇistɪ | *lightning* |
| 67. | bə | *west;* bə́námí *westward* |
| 68. | bə́ẓâ·ṁᴀ | *log* |
| 69. | càcɪ | *breath* |
| 70. | cècɪ | *wall* |
| 71. | cé·yá | *first* |
| 72. | cínᴀ | *turkey* |
| 73. | cúskɪ | *fox* |
| 74. | ċâ·pɪ | *fly* |
| 75. | ċé·bə́ná | *bitter* |
| 76. | ċéᴡᴀsč̇ᴀ | *stew* |
| 77. | ċícɪ | *water, juice* |
| 78. | ċí·ga | *locust* |
| 79. | ċíṁᴀsč̇êic̣ᴀ | *iron* |
| 80. | ċísdiˀini | *honey* |
| 81. | ċíyáuẓáṅɪ | *adobe brick* |
| 82. | čá·dʸa | *side* |
| 83. | čámá | *tomorrow* |
| 84. | čècɪ | *also* |

| | | |
|---|---|---|
| 85. | čémɪ | *three;* čémiya *three times* |
| 86. | čí·ná | *river* |
| 87. | č̓ánáṁɪ | *bat* |
| 88. | č̓áyâ·ni | *shaman* |
| 89. | č̓í·ríga | *hawk* |
| 90. | dabə́nʊꜱᴋᴀ | *horned toad* |
| 91. | dâ·ni | *squash, pumpkin* |
| 92. | dápᴀᴄɪ | *corpse* |
| 93. | dáẇȧçᴀ | *moon, month* |
| 94. | dėṣʊ | *place* |
| 95. | diˀ | *here* |
| 96. | díˀái | *there* |
| 97. | dísí | *from here* |
| 98. | dí·skámá | *cornhusk* |
| 99. | díyᴀ | *dog* |
| 100. | du | *this, this one* |
| 101. | dúk̓é· | *that way* |
| 102. | dúwiṁɪšɪ | *stocking* |
| 103. | dúẇé· | *this way* |
| 104. | dʸá·dʸʊ | *bobcat* |
| 105. | dʸá·mí | *eagle* |
| 106. | dʸâ·na | *four* |
| 107. | dʸáṅᴀ | *jackrabbit* |
| 108. | dʸáṅé | *deer* |
| 109. | dʸáwa | *early* |
| 110. | dʸá·wí | *gourd* |
| 111. | dʸáyaˀani | *piñon nut* |
| 112. | dʸèicɪ | *piñon pine* |
| 113. | dʸi | *up* |
| 114. | dʸídʸᴀ | *north* |
| 115. | dʸíní | *above* |
| 116. | dʸú·bí | *badger* |
| 117. | dʸû·mí· | *two* |
| 118. | dʸúmə́ | *brother* |
| 119. | dʸû·ya | *twice* |
| 120. | dʸə́·ṣa | *elk* |
| 121. | gánami | *beans* |
| 122. | gáisbiṣᴀ | *world* |
| 123. | gasgáuga | *quail* |
| 124. | gáᴡɪᴄɪ | *seed* |
| 125. | gâ·yu | *morning* |
| 126. | gu | *and* |
| 127. | guˀ | *for, therefore* |
| 128. | gû·ˀu· | *beaver* |
| 129. | gùcɪ | *firewood* |
| 130. | gúhȧyᴀ | *bear* |
| 131. | gúk̓úmišɪ | *eight* |
| 132. | gúmásáwá | *cooking pot* |
| 133. | gúẇa· | *how* |
| 134. | gúyást̓í | *basket* |
| 135. | ha· | *east;* há·námí *eastward* |
| 136. | hai | *where (destination)* |
| 137. | hau | *who, someone* |
| 138. | hauˀ | *near, suddenly* |
| 139. | háubá· | *everybody* |
| 140. | hȧbánɪ | *oak* |
| 141. | há·bí | *feather* |
| 142. | háˀáċɪ, háˀáċi· | *land, earth* |
| 143. | háċʊ | *how much, how many, few* |
| 144. | háˀáč̓anani | *tooth* |
| 145. | háçⱻᴄᴇ | *man* |
| 146. | hádáẇini | *navel* |
| 147. | há·di | *where, somewhere* |
| 148. | háidí | *which, what* |
| 149. | hȧdʸani | *soapweed* |
| 150. | hâ·k̓a·ᴋᴀ | *fir* |
| 151. | háik̓ámí | *once* |
| 152. | hâ·k̓a·ni | *fire, hot coals* |
| 153. | hák̓é· | *that way* |
| 154. | há·k̓ʊ | *ready* |
| 155. | háik̓ʊ | *when* |
| 156. | hâ·ma·ni | *leg, thigh* |
| 157. | hâ·mi | *tobacco* |
| 158. | há·múčuni | *toe* |
| 159. | há·múša·ni | *beard* |
| 160. | háṁa· | *long ago* |
| 161. | hâ·ṁa·ni, hâ·ṁaˀani | *hail* |
| 162. | háṁᴀsdíˀini | *hand, finger* |
| 163. | hâ·ṁe· | *ice* |
| 164. | hánâ·mi | *naked* |
| 165. | hâ·ni· | *pine* |
| 166. | hánʊ | *people* |
| 167. | há·ṅé | *hortative particle* |
| 168. | hȧsč̓á | *yucca* |
| 169. | hásdiˀini | *foot* |
| 170. | hàsgəni | *bone* |
| 171. | háˀá·st̓i·çᴀ | *town, city* |
| 172. | há·š̓uwiṁɪ | *shoe, moccasin* |
| 173. | há·t̓awe | *pollen* |
| 174. | háwe· | *snow* |
| 175. | háwiẓana | *stalk* |
| 176. | háẇái | *there* |
| 177. | háẇé· | *this way* |
| 178. | haẇí· | *here, take it* |
| 179. | háˀáẇí·č̓ánani | *claw, fingernail* |
| 180. | há·ẇíná | *quickly, immediately* |
| 181. | háẏaċɪ | *awl* |
| 182. | háẏéi | *there* |
| 183. | há·ẓánɪ | *hair* |
| 184. | hâ·ẓəni | *onion* |
| 185. | he | *that one* |
| 186. | hê·ṁé· | *all right, enough* |
| 187. | hénat̓ɪ | *cloud* |
| 188. | héyᴀdʸɪ | *turtle* |
| 189. | héyȧšɪ | *fog, mist* |
| 190. | hé·ẏá | *with (instrumental)* |

| | | |
|---|---|---|
| 191. | hínʊ | *I, we* |
| 192. | hiṅá | *all right* |
| 193. | hí·sč̓í | *sunflower* |
| 194. | hìsgai | *knife* |
| 195. | hìst̓iya·ni | *arrowhead, spearhead* |
| 196. | híṣʊ | *you* |
| 197. | híẇá | *now, today* |
| 198. | híyak̓a·ċᴇ | *domestic animal* |
| 199. | híyâ·ni | *road, path* |
| 200. | híyá·ẇá | *doorway, road* |
| 201. | híẓáˀai | *tree, cottonwood* |
| 202. | hí·ẓani | *seed* |
| 203. | hú·bə́nɪ | *saliva* |
| 204. | hú·ˀùga | *dove* |
| 205. | hùséní | *wool* |
| 206. | hùsk̓ani | *yucca fruit, banana* |
| 207. | húṣâ·cɪ | *cotton* |
| 208. | húwak̓ᴀ | *sky* |
| 209. | húwanáˀani | *eye* |
| 210. | húwî·ni | *milk* |
| 211. | hə́çɜsk̓áwa | *willow* |
| 212. | kádʸᴀ | *behind;* kádʸámá· *backward* |
| 213. | káṣâitɪ | *summer, year* |
| 214. | ká·t̓idʸá | *clean, pure* |
| 215. | kínátɪ | *green corn* |
| 216. | kíẇá | *plant* |
| 217. | ku | *south;* kúwámí *southward* |
| 218. | kú·kɜ | *winter* |
| 219. | kúpést̓ᴜᴄᴀ | *lightning* |
| 220. | kúẇe·ˀᴇ | *sweet* |
| 221. | kə́·cɪ | *antelope* |
| 222. | k̓ácɪ | *ten* |
| 223. | k̓áucɪgái | *maybe* |
| 224. | k̓àka·dʸɪ | *square, plaza* |
| 225. | k̓ákana | *wolf* |
| 226. | k̓ámᴀskɜ | *spider* |
| 227. | k̓ánɪ | *cedar* |
| 228. | k̓ánani | *heat of sun* |
| 229. | k̓ásdʸâ·ċɪ | *rainbow* |
| 230. | k̓áwina | *moss* |
| 231. | k̓u·, k̓úwí | *woman, female* |
| 232. | k̓úimí | *slightly, a small amount* |
| 233. | k̓úṣᴀ | *last night* |
| 234. | k̓ú·tí, č̓ú·tí | *mountain* |
| 235. | k̓ú·yáu | *old woman* |
| 236. | k̓úyàitɪ | *game animal* |
| 237. | mai | *almost* |
| 238. | màgə́· | *girl* |
| 239. | mâ·nu· | *a long time* |
| 240. | máṙéu | *tortilla* |
| 241. | másâ·ni | *leaf* |
| 242. | màṩᴀ | *light* |
| 243. | máyuk̓ʊ | *nine* |
| 244. | múšêiç̣ᴀ | *buffalo* |
| 245. | múšɪ | *soapweed* |
| 246. | mídʸu· | *very* |
| 247. | mí·ná | *hortative particle* |
| 248. | mû·k̓aiç̣ᴀ | *mountain lion* |
| 249. | mə́·dé· | *boy* |
| 250. | ṁáˀáċí | *blood* |
| 251. | ṁádai | *ball* |
| 252. | ṁàidʸana | *seven* |
| 253. | ṁàgəṙɪ | *evil* |
| 254. | ṁák̓a | *dipper* |
| 255. | ṁá·ní | *word* |
| 256. | ṁá·š̓áwɪ | *buzzard* |
| 257. | ṁe· | *like, similar to* |
| 258. | ṁê·wa | *mud* |
| 259. | ṁé·zíčɪ | *large* |
| 260. | ṁí·ċɪ | *clay* |
| 261. | ṁî·çᴀ | *hummingbird* |
| 262. | ṁídá | *moth* |
| 263. | ṁí·ga | *others* |
| 264. | ṁína | *salt* |
| 265. | ṁísč̓ai | *ashes* |
| 266. | ṁístɪ | *alkali* |
| 267. | na | *yet* |
| 268. | nàce· | *new* |
| 269. | náċí | *food, lunch* |
| 270. | náwâiẏᴀ | *middle-aged* |
| 271. | ná·yá | *under* |
| 272. | náiẓá | *thank you (women's speech)* |
| 273. | nu· | *only, itself* |
| 274. | nú·bəda | *alone* |
| 275. | núwáiná | *separate* |
| 276. | núya | *night* |
| 277. | nú·yú· | *oneself* |
| 278. | nə́·ˀə́ç̣ɜ | *rubber* |
| 279. | nə́tɪ | *prairie dog* |
| 280. | ṅau | *many* |
| 281. | ṅáwiˀik̓ᴀ | *egg* |
| 282. | ṅə | *down* |
| 283. | pánacɪ | *lung* |
| 284. | pâ·ni | *bag* |
| 285. | peséċuru | *bedbug* |
| 286. | pé·ṩᴀ | *jackrabbit* |
| 287. | pét̓á·ná | *cornmeal* |
| 288. | pìcɪ | *buckskin* |
| 289. | pí·nu· | *fancy, fine* |
| 290. | píṙáṙá | *flag* |
| 291. | písč̓ánani | *skin, hide* |
| 292. | ráwá· | *good* |
| 293. | rèdʸᴀ | *rabbit* |
| 294. | rî·pᴀ | *goose* |

| | | |
|---|---|---|
| 295. | rî·wagaṅɪ | *fat* |
| 296. | rə́·skíšɪ | *small* |
| 297. | sa | *back, return to previous location* |
| 298. | sai | *all* |
| 299. | sȧičᴜ | *day* |
| 300. | sá·wákᴀ | *money, metal* |
| 301. | sėkᴀ | *sure* |
| 302. | si | *again, return to present location* |
| 303. | sí·ˀí | *ant* |
| 304. | sí·dʸᴀ | *squirrel* |
| 305. | sínani | *flesh* |
| 306. | síyaṅɜ | *mouse* |
| 307. | súwá | *yesterday* |
| 308. | sə̀cɪ | *wrongdoing* |
| 309. | sə́nᴀ | *middle* |
| 310. | sbíga | *woodpecker* |
| 311. | sbí·ná | *chicken* |
| 312. | sbú·ná | *jug* |
| 313. | sč̇ái | *last* |
| 314. | sč̇á·ná | *meadowlark* |
| 315. | sč̇ápᴀkᴀ | *twilight* |
| 316. | sč̇áṙɪ | *grasshopper* |
| 317. | sč̇áẇá | *popcorn* |
| 318. | sč̇áẓə́· | *fast* |
| 319. | sč̇íṙá | *crow* |
| 320. | sč̇ísᴀ | *six* |
| 321. | sč̇úmᴜ | *wild honey* |
| 322. | sč̇úẏú·ná | *mosquito* |
| 323. | sč̇úẓuẇɪ | *stinkbug* |
| 324. | sdírí·ná | *seashell* |
| 325. | sdú·ná | *mushroom* |
| 326. | sgâ·ẇašɪ | *rat* |
| 327. | sgamaré· | *lizard* |
| 328. | skȧç̣ɜ | *frog* |
| 329. | skàskᴜ, kàskᴜ | *bighorn sheep* |
| 330. | skú·ná | *blackbird* |
| 331. | skú·ẏᴜ | *giant* |
| 332. | skə́rí·ná | *flour* |
| 333. | sk̇áˀá·dʸᴜ | *bullsnake* |
| 334. | sk̇àšɪ | *fish* |
| 335. | sk̇úrú·ná, sk̇ú·rúná | *peas* |
| 336. | sk̇əṙí·na | *wagon* |
| 337. | spáˀáċɪ | *mockingbird* |
| 338. | spérá·ná | *plate* |
| 339. | spíníní | *dwarf corn* |
| 340. | spúrú·ná | *chickenpox* |
| 341. | stú·na | *autumn* |
| 342. | sṫə́·cɪ | *straight* |
| 343. | šàsk̇ᴀ | *roadrunner* |
| 344. | šâ·witɪ | *parrot* |
| 345. | ší·buˀuk̇ᴜ | *cotton boll* |
| 346. | šidʸitᴀ | *star* |
| 347. | šína· | *louse* |
| 348. | šú·dá | *goose* |
| 349. | šúk̇ᴜ | *corner* |
| 350. | šû·mu· | *corpse* |
| 351. | šúrúyé | *bluebird* |
| 352. | šúwimi | *turquoise* |
| 353. | ṣáṁá | *scattered* |
| 354. | ṣâ·naẏᴀ | *slow* |
| 355. | ṣu | *narrative particle* |
| 356. | ṣúcí· | *raw* |
| 357. | ṣúguč̇aċɪ | *cross, crucifix* |
| 358. | ṣúmák̇áwái | *right hand* |
| 359. | ṣumí | *already* |
| 360. | ṣúisɪ | *bluejay* |
| 361. | ṣúwi· | *snake* |
| 362. | ṣúyáná | *around* |
| 363. | ṣúzû·na | *coyote* |
| 364. | tâ·ṁᴀ | *five* |
| 365. | tíyé· | *far* |
| 366. | ṫa | *thus* |
| 367. | ṫî·ç̣ᴀ | *springtime* |
| 368. | ˀú·báyáṅɪ | *fireplace* |
| 369. | wàdʸuˀuni | *pottery* |
| 370. | wágəṅɪ | *dress, shirt* |
| 371. | wâ·nɪ | *smoke* |
| 372. | wá·sɪ | *bird snare* |
| 373. | wáṣû·cɪ | *dust* |
| 374. | wá·wá | *medicine* |
| 375. | wá·wáiẓəni | *root* |
| 376. | we | *that one* |
| 377. | wísdʸâ·k̇ᴀ | *bow* |
| 378. | wə́·ˀé | *thank you (men's speech)* |
| 379. | ẇábû·sč̇ᴀ | *eagle down* |
| 380. | ẇȧbə́nɪ | *abalone shell* |
| 381. | ẇá·činɪ | *tongue* |
| 382. | ẇáisṫí | *bowl* |
| 383. | ẇâ·yuṣᴀ | *duck* |
| 384. | ẇínᴜskᴀ | *heart* |
| 385. | ẇí·sga | *robin* |
| 386. | ẇíšî·ni | *nose* |
| 387. | ẇìsṗɪ | *cigarette* |
| 388. | yáˀái | *sand* |
| 389. | yábášɪ | *corn silk* |
| 390. | yàsbusɪ | *cottonwood cotton* |
| 391. | yê·tᴜ | *mesquite* |
| 392. | yuˀ | *yonder* |
| 393. | yúˀái | *there* |
| 394. | yu̇bə́ | *worm* |
| 395. | yu̇dá·ç̣ᴀ | *windstorm* |
| 396. | yúk̇é· | *that way* |
| 397. | yúk̇ᴜ | *away* |
| 398. | yu̇pé·sč̇ᴀ | *story, legend* |

| | | |
|---|---|---|
| 399. | yúsí | *from there* |
| 400. | yúẇé· | *this way* |
| 401. | ẏá·bí | *staff of office* |
| 402. | ẏá·čínɪ | *shelled corn* |
| 403. | ẏá·k̇ᴀ | *ripe corn* |
| 404. | ẏâuni | *stone* |
| 405. | ẏàsbúẓani | *brains* |
| 406. | ẏáuṣadí | *sand* |
| 407. | ẏáˀáwâ·ni | *intestines* |
| 408. | ẏáẇᴀstí | *stick* |
| 409. | ẏâ·yu | *crippled* |
| 410. | ẏu· | *expression of doubt* |
| 411. | ẏû·ni | *song* |
| 412. | ẏú·sbi·ni | *shoulder* |
| 413. | ẏú·skúṁá | *corncob* |
| 414. | za | *no* |
| 415. | záičú | *field* |
| 416. | zàdʸa | *plains, desert* |
| 417. | zàsdima | *grinding box* |
| 418. | záwini | *old* |
| 419. | zázi | *not* |
| 420. | zê·ni | *talkative* |
| 421. | zi | *what, something* |
| 422. | zíkᴜsdʸáwi | *bridge* |
| 423. | ziná | *again* |
| 424. | ẓàicɪ | *rabbit club* |

## VERBS

Verbs are listed alphabetically by the verb core. The stem or stems based on each core follow, together with the stem classification. See "Verb Classes" for an outline of stem classification and "Stem Variants" for an explanation of notations identifying stem variants.

425. -a *to be.* -a(ˀ) Singular, Class 11–25 intransitive. -ê·ˀᴇ-ṣᴜtɪ Dual, Class 11–26 intransitive. -â·ˀᴀ Plural, Class 11–25 intransitive.

426. -a *to have, to possess.* -a Singular, Class 7–15 intransitive. -â·ˀá Dual, Class 2–24 intransitive. -áˀà-šᴇ Plural, Class 2–23 intransitive.

427. -ˀᴀ *to be closed.* -áˀâ·ˀᴀ Singular, Class 10 intransitive.

428. ˀésᴜ—ᴀ *to sneeze.* Type B, singular, Class 1–1 intransitive.

429. -ˀᴜ *to give a flat or long object.* -âuˀᴜ Irregular transitive.

430. -ˀᴜ *to dwell.* -âuˀᴜ Singular, Class 8–14 intransitive. -á·ˀâuˀᴜ Dual, Class 2–24 intransitive.

431. -bái *to sleep.* -í·bái Singular, Class 10–6 intransitive. -áˀáibái Dual, Class 2–24 intransitive. -éˀé·baiˀ-šɪ Plural, Class 11–25 intransitive.

432. -bá·bá *grandparent, a man's mother's mother or father's father.* -ábá·bá Singular, Class 7–15 intransitive.

433. -bádʸu *to awake, get someone out of bed.* -í·bádʸu((ˀ)) Class C4 transitive.

434. -baˀtᴜ *to sleep.* -í·baˀtᴜ Singular, Class 10–6 intransitive. -áˀáibaˀtᴜ Dual, Class 2–24 intransitive. -éˀé·baˀtᴜ Plural, Class 11–25 intransitive.

435. -báyᴀ *to light a fire.* -íbáyᴀ Singular, Class 10–7 intransitive. -íbáya-ṅɘ Dual, Class 10–22 intransitive. -íbáya-ṅᴇ Plural, Class 10–21 intransitive.

436. -be *to tell.* -ù/àbe(·ˀ) (-v́v-) Class A1 transitive.

437. -béucᴀ *to call.* -ù/àbéucᴀ Class A1 transitive.

438. -be·ṫᴀ *to ask.* -ù/àbe·ṫᴀ (-v́v-) Class A8 transitive.

439. -bí *to get wood.* -úbí Singular, Class 5–8 intransitive.

440. bî·ri—aṅɪ *to be smooth.* Type B, singular, Class 1 intransitive.

441. -bíya *sister-in-law.* -ábíya Singular, Class 7–15 intransitive.

442. -bu·cɪ *to be frightened.* -ùbu·cɪ Singular, Class 13–28 intransitive.

443. bû·pᴜ—aṅɪ *fresh, cool.* Type B, singular, Class 1 intransitive.

444. bùṣᴜ—ᴀ *to have an odor.* Type B, singular, Class 1–1 intransitive.

445. -bə́nacᴀ *to sew.* -ȧubə́nacᴀ Singular, Class 5–8 intransitive.
446. -bənaiˀɪ *to put in a bag.* -áubənaiˀɪ Singular, Class 9–11 intransitive.
447. bə́ˀə́ṙi—ɪ *winding, zigzag.* Type B, singular, Class 10 intransitive.
448. cá·—ᴀ *to breathe.* Type B, singular, Class 1–1 intransitive.
449. -cɪkᴜyᴀ *to say to.* -ȧcɪkᴜyᴀ Singular, Class 10–7 intransitive.
450. -ċᴀyᴀᴡᴀ *to be angry.* -úċᴀyᴀᴡᴀ (future -úċayawa) Singular, Class 5–8 intransitive. -úċayawa-ṅɜ Dual, Class 5–10 intransitive. -áˀâ·ċayawa-ṅᴇ Plural, Class 5–9 intransitive.
451. ċáyú—ɪ *to be broken.* Type B, singular, Class 10 intransitive.
452. -ċáyᴜcᴀ *to break.* -áˀáuċáyᴜcᴀ Singular, Class 5–8 intransitive.
453. -ċê·nacᴀ *to chew.* -áˀáuċê·nacᴀ Singular, Class 5–8 intransitive.
454. -ċɪ *to arrive.* -áˀáċɪ Singular, Class 10–7 intransitive. -á·ˀáċɪ Dual, Class 2–24 intransitive.
455. -ċídʸᴜstᴀ *to think, to worry.* -úċídʸᴜstᴀ Singular, Class 5–8 intransitive.
456. -ċi·kᴜ *to be guilty.* -û·ċi·kᴜ Singular, Class 3–27 intransitive.
457. -ċípᴀ *to need, to want.* -úċípᴀ Singular, Class 3–27 intransitive. Transitive forms conforming to Class B based on the stem -íċípᴀ also occur for first and second person objects.
458. -ċíṣᴜ *water well.* -áˀá·ċiṣᴜ Singular, Class 1–1 intransitive.
459. -ċə́çɜcᴀ *to cut.* -áˀáuċə́çɜcᴀ Singular, Class 5–8 intransitive.
460. -čᴀ *to rain.* -ȧčᴀ Singular, Class 4 intransitive.
461. -čᴀ *to fall.* -účᴀ Singular, Class 5–8 intransitive. -áča-ṅɜ Dual, Class 5–10 intransitive.
462. -čaṅɪ *to stand.* -ə́čaṅɪ Singular, Class 1–3 intransitive.
463. -čí·ni *to dance.* -ȧčí·ni Singular, Class 1–3 intransitive.
464. -čiṅɪ *yellow.* -ú·čiṅɪ Singular, unclassified intransitive. k̓ú·čiṅɪ *it is yellow.*
465. čú·—ᴀ *to belch.* Type B, singular, Class 1–1 intransitive.
466. -čᴜ *to have in a bag.* -ú·čᴜ Singular, Class 8–14 intransitive. -ú·ˀu̇čᴜ Dual, Class 2–24 intransitive. -ú·ẇȧčᴜ Plural, Class 2–23 intransitive.
467. -č̇ᴀ *tooth.* -áˀáč̇ᴀ Singular, Class 10–6 intransitive.
468. -č̇ᴀ *to be hot.* -â·č̇ᴀ Singular, Class 1–3 intransitive.
469. -č̇âiˀɪ *to close the eyes.* -ə́ˀə́č̇âiˀɪ Singular, Class 5–8 intrasitive.
470. -č̇áᴡᴀ *to steal.* -ú·č̇áᴡᴀ Singular, Class 5–8 intransitive.
471. -č̇áyuṁᴀ *to be tired.* -úč̇áyuṁᴀ Singular, Class 13–28 intransitive.
472. -çᴀ *animal's horn.* -áçᴀ Singular, Class 10 intransitive.
473. -çᴀ *to build a house.* -á·ˀaçᴀ Singular, Class 9–11 intransitive.
474. -çᴀ *to do.* -î·çᴀ Singular, Class 14–4 intransitive. -î·ẓa·-ṅɜ Dual, Class 14–20 intransitive. -î·ẓa·-ṅᴇ Plural, Class 14–19 intransitive.
475. -çᴀ *to happen.* -áˀâiçᴀ Singular, Class 9 intransitive.
476. -çɜ *house.* -áçɜ Singular, Class 4 intransitive. -áˀâ·çɜ Plural, Class 2–23 intransitive.
477. -çɜkᴀ *to smoke.* -ȧçɜkᴀ Singular, Class 5–8 intransitive.
478. -dá·ˀᴀ *to ask for something.* -u̇idá·ˀᴀ Singular, Class 5–8 intransitive.
479. -dáˀáu *grandparent, woman's father's father or mother's mother.* -ádáˀáu Singular, Class 7–15 intransitive.
480. dáˀáᴡᴀ—ᴀ *to boil.* Type B, singular, Class 1 intransitive.
481. -di *to plant.* -áudi(?) Singular, Class 9–11 intransitive. -áudi-ṁɜ Dual, Class 9–12 intransitive. -á·ẇá·di-ṁᴇ Plural, Class 5–9 intransitive.
482. -di *to give a bulky object.* -u̇di(?) Class D3 transitive.
483. -dî·na *to be covered.* -⁽î⁾dî·na(?) Singular, Class 13–28 intransitive.

484. -dî·ša *to feed.* -í/ádî·ša(?) Class C1 transitive.
485. -dî·ye *to get, to fetch.* -údî·ye Singular, Class 1–3 intransitive.
486. -dùdʸᴀ *to hang something.* -ídùdʸᴀ Singular, Class 10–7 intransitive.
487. -dʸa *to catch.* -í/ádʸa(?) Class C3 transitive.
488. -dʸa *to descend.* -ə́dʸa (-ə̀dʸᴀ) Singular, Class 1–3 intransitive.
489. -dʸá· *to possess an animal.* -⁽á⁾dʸá· or -⁽á⁾dʸá·še Singular, Class 7–15 intransitive.
490. -dʸȧdʸɪ *to fight.* -ủdʸȧdʸɪ Plural, Class 5–9 intransitive.
491. -dʸašɪ *to fast.* -údʸašɪ Singular, Class 8–14 intransitive. -ú·ˀùdʸašɪ Dual, Class 2–24 intransitive. -ú·ẇàdʸašɪ Plural, Class 2–23 intransitive.
492. -dʸáᴡᴀ *to stab.* -í/ádʸáᴡᴀ Class C1 transitive.
493. -dʸâ·wa *to be helpful.* -údʸâ·wa(?) Singular, Class 1–1 intransitive.
494. -dʸʊ *to cost.* -ídʸʊ Singular, Class 14 intransitive.
495. -dʸʊ *to arrive.* -é·dʸʊ Plural, Class 11–25 intransitive.
496. -dʸʊ *to know, to be aware of.* -áudʸʊ Singular, Class 9–11 intransitive.
497. -dʸúmɪ *to remember.* -ú·/á·dʸúmɪ Class B6 transitive.
498. -dʸúmiçᴀ *to learn.* -ȧudʸumiçᴀ Singular, Class 5–8 intransitive.
499. -dʸúmiçʊᴡɪ *to forget.* -ú·/á·dʸúmiçʊᴡɪ Class B4 transitive.
500. -dʸúmɜ *man's brother.* -ádʸúmɜ Singular, Class 7–15 intransitive.
501. -dʸʊšɪ *to be afraid.* -údʸʊšɪ Singular, Class 13–28 intransitive.
502. dʸə̀—áṅɪ *to be lazy.* Type B, singular, Class 1–1 intransitive.
503. -gá *to look.* -ígá (-ìkᴀ) Singular, Class 10–6 intransitive.
504. -gúyᴀ *to sit.* -úgúyᴀ Singular, Class 5–8 intransitive. -úgúya-ṅɜ Dual, Class 5–10 intransitive.
505. -gúyᴀ *to place, to send, to sell.* -í/ágúyᴀ Class C1 transitive.
506. -gə́çɜtɪ *to blossom.* -ágə́çɜtɪ Singular, Class 1 intransitive.
507. háu—ᴀ *to yawn.* Type B, singular, Class 1–1 intransitive.
508. -hɪmᴀ *to believe.* -úhɪmᴀ Singular, Class 3–27 intransitive.
509. -ká· *to hear.* -áká· Singular, Class 4–3 intransitive.
510. káyú—ɪ *to be broken.* Type B, singular, Class 10 intransitive.
511. -kái *to be full, satisified.* -úkái (-ùkᴀɪ) Singular, Class 4–3 intransitive.
512. -kᴀɪ *to lie down.* -ìkᴀɪ (fut. -ìgai) Singular, Class 13–28 intransitive.
513. -kᴀčᴀ *to see.* -ù/àkᴀčᴀ (-v́v-) Class A2 transitive.
514. -kàzi *to heal.* -ú/ákàzi((?)) Class A4 transitive.
515. -kʊ *to bite.* -àkʊ Class B1 transitive.
516. -kʊ *to go.* -ėkʊ Plural, Class 11–25 intransitive.
517. -kʊ *to be located.* -ȧkʊ (-ìkʊ) Singular, Class 1–16 intransitive.
518. -ku·mi *to bring.* -àiku·mi(?) Class D3 transitive.
519. -kʊpᴀᴡᴀ *to chop.* -íkʊpᴀᴡᴀ Singular, Class 10–7 intransitive. -íkʊpawa-ṅɜ Dual, Class 10–22 intransitive. -íkʊpawa-ṅᴇ Plural, Class 10–21 intransitive.
520. -kʊyᴀ *to do.* -ėkʊyᴀ (fut. -ėguya) Singular, Class 11–25 intransitive.
521. kə́·—aṅɪ *to be red.* Type B, singular, Class 1–1 intransitive.
522. -k̓ᴀ *mouth.* -î·k̓ᴀ Singular, Class 10–7 intransitive.
523. -k̓àicᴀ *to hit.* -ú·/á·k̓àicᴀ Class A1 transitive.
524. -k̓áyᴀ *to wipe.* -ú·k̓áyᴀ Class A7 transitive.
525. -k̓î·ni *friend.* -áuk̓î·ni Singular, Class 7–15 intransitive.
526. -k̓ui *wife.* -âuk̓ui Singular, Class 7–15 intransitive.
527. -k̓ûiçᴀ *man's sister.* -ák̓ûiçᴀ Singular, Class 7–15 intransitive.
528. -k̓úmíná *string.* -úk̓úmíná Singular, Class 4 intransitive.
529. -k̓úrú·ná *kidney.* -áuk̓úrú·ná Singular, Class 7–15 intransitive.
530. k̓úr̓ᴀ—ɪ *smoke, billowing dust.* Type B, singular, Class 10 intransitive.

531. -ma *to go.* Unclassified intransitive, occurring only in the hortative mode. ˀí·ma *go.*
532. -ma· *thigh.* -â·ma· Singular, Class 4–3 intransitive.
533. -ma·ᴄɪ *to be true.* -áima·ᴄɪ Singular, unclassified intransitive. k̓áima·ᴄɪ *it is true.*
534. -måkⱻ *daughter.* -åmåkⱻ Singular, Class 7–15 intransitive.
535. -má·záni *to help.* -ú·má·záni(?) Class D3 transitive.
536. -mú·ᴄᴀ *to thunder.* -áumú·ᴄᴀ Singular, Class 9 intransitive.
537. -múčᴜ *toe.* -á·múčᴜ Singular, Class 4–3 intransitive.
538. -mudʸᴜᴄᴀ *to kill.* -ú/ámudʸᴜᴄᴀ Class A1 transitive.
539. múṙᴀ—ɪ *dented.* Type B, singular, Class 10 intransitive.
540 . -múšᴀ *beard.* -á·múšᴀ Singular, Class 10–6 intransitive.
541· -məmə́ *grandfather, grandchild.* -áuməmə́ Singular, Class 7–15 intransitive.
542. -mə́·tɪ *son.* -ámə́·tɪ Singular, Class 7–15 intransitive.
543. -ṁᴀ *house, to dwell.* -â·ṁᴀ Singular, Class 8–14 intransitive. -áˀâ·ṁᴀ Dual, Class 2–24 intransitive.
544. -ṁaċɪ *waist.* -úṁaċɪ Singular, Class 4–3 intransitive.
545. -ṁa·dʸᴀ *to pick fruit.* -úṁ/má·dʸᴀ Singular, Class 5–8 intransitive.
546. -ṁa·pᴀ *palm of hand.* -áṁa·pᴀ Singular, Class 1–1 intransitive.
547. -ṁᴀsdi *hand, finger.* -áṁᴀsdi(?) Singular, Class 4–3 intransitive.
548. -ṁⱻ *to leave, emerge.* -úṁⱻ Singular, Class 1–3 intransitive. -û·ṁⱻ Dual, Class 2–24 intransitive. -ê·ṁⱻ Plural, Class 11–25 intransitive.
549. -na *eye.* -â·na Singular, unclassified intransitive. k̇â·na *his eye.*
550. -na· *to be cloudy.* -ína· Singular, Class 10 intransitive.
551. -nač̇ᴀɪ *stomach.* -ú·nač̇ᴀɪ Singular, Class 4–3 intransitive.
552. -nádʸúwi *to light a fire.* -ánádʸúwi(?) Singular, Class 10–7 intransitive. -ánádʸúwi-ṁⱻ Dual, Class 10–22 intransitive. -ánádʸúwi-ṁᴇ Plural, Class 10–21 intransitive.
553. -námátɪ *seat, nest.* -ánámátɪ Singular, Class 7–15 intransitive.
554. -náṁᴀᴄᴀ *to stop, rebuke.* -ú·/á·náṁᴀᴄᴀ Class A1 transitive.
555. -násgái *head.* -ánásgái Singular, Class 1–1 intransitive.
556. -nàtᴀ *to buy.* -ínàtᴀ Singular, Class 10–7 intransitive.
557. -natᴀ *to cook.* -áinatᴀ Singular, Class 9–11 intransitive.
558. -nawaṅɪ *to be mean.* -â·nawaṅɪ Singular, Class 12–27 intransitive.
559. -náwe *man's mother's brother, sister's son.* -á·náwe Singular, Class 7–15 intransitive.
560. -nâ·ya *mother, aunt.* -ánâ·ya Singular, Class 7–15 intransitive.
561. -ni *to know, be acquainted with.* -ú/áni((?)) Class B5 transitive.
562. -ni *to go, to walk.* -â·ni Singular, Class 6–3 intransitive.
563. -nə̂·ᴄᴀ *to pull.* -ú·nə̂·ᴄᴀ Singular, Class 1–1 intransitive.
564. -ṅȧisdʸᴜ *father, father's brother.* -áṅȧisdʸᴜ Singular, Class 7–15 intransitive. -áṅȧisdʸᴜ-šᴇ Plural, Class 2–23 intransitive.
565. -ṅᴀza *to be healthy.* -úṅ/nᴀza(?) Singular, Class 5–8 intransitive. -úṅ/nᴀzaˀa-ṅⱻ Dual, Class 5–10 intransitive.
566. -ṅėsⱻ *to look, to peer.* -íṅ/nėsⱻ Singular, Class 4–5 intransitive.
567. -ṅeṫᴀ *to say.* -áiṅeṫᴀ Singular, Class 1–3 intransitive.
568. -ṅí *body.* -íṅí Singular, Class 14–4 intransitive.
569. -ṅùtɪ *lower leg.* -áuṅùtɪ Class 1–1 intransitive.
570. -pániusṫᴜ *to be thirsty.* -ípániusṫᴜ Singular, Class 10–7 intransitive. -áipániusṫᴜ Dual, Class 2–24 intransitive. -áiẏápániusṫᴜ Plural, Class 2–23 intransitive.
571. -páṅɪ *to be dry.* -í·páṅɪ Singular, Class 13–28 intransitive.

572. -pAsdʸU *to be tied.* -àpAsdʸU Singular, Class 7–13 intransitive.
573. -pAšI *to be dark.* -ápAšI Singular, Class 6 intransitive.
574. -pE *to eat.* -u̇pE Singular, Class 5–8 intransitive. -â·ˀAbe Dual, Class 2–24 intransitive. -â·ˀApE Plural, Class 2–23 intransitive.
575. pét̓A—A *to be cracked.* Type B, singular, Class 1 intransitive.
576. -pI *forehead.* -ùpI Singular, Class 1–1 intransitive.
577. písč̇A—I *flat, spread out.* Type B, singular, Class 10 intransitive.
578. -pú·cA *to blow.* -ú·pú·cA Singular, Class 1–1 intransitive.
579. -pɜ *to enter.* -ùpɜ Singular, Class 1–3 intransitive.
580. -ṗak̓AcA *to touch.* -ú/áṗak̓AcA Class A1 transitive.
581. -sA *difficult.* -áusA Singular, Class 6 intransitive.
582. -sé *to draw water.* -ȧusé Singular, Class 5–8 intransitive.
583. -sípA *eyelash.* -isípA Singular, Class 14–4 intransitive.
584. -suk̓UcA *to kick.* -ú/ásuk̓UcA Class A1 transitive.
585. -sum̓eˀestA *to teach.* -í/ásum̓eˀestA(·) Class D1 transitive.
586. -sbí·cA *to whistle.* -ùsbí·cA Singular, Class 1–1 intransitive.
587. -sbə́çA *to string beads.* -úsbə́çA Singular, Class 5–8 intransitive.
588. -sč̇ècA *to squeal, make an animal noise.* -ú·sč̓ècA Singular, Class 1–3 intransitive.
589. sč̇ú·—A *to swallow.* Type B, singular, Class 1–1 intransitive.
590. sč̇úṣU—A *to cough.* Type B, singular, Class 1–1 intransitive.
591. -sdi *foot.* -ásdi(?) Singular, Class 4–3 intransitive.
592. sdú.—I *bowl-shaped.* Type B, singular, Class 10 intransitive.
593. -sdʸA *to suck.* -í·sdʸA Singular, Class 10–6 intransitive.
594. -sdʸIrI *to be brown.* -ùisdʸIrI Singular, Class 6 intransitive.
595. -sgú·çUcI *to drool, slobber.* -î·sgú·çUcI Singular, Class 13–28 intransitive.
596. -sgum̓AšA *to hide.* -u̇isgum̓AšA Singular, Class 5–8 intransitive.
597. -sk̓A *to drink.* -ə̀sk̓A Singular, Class 1–3 intransitive. -ȧsk̓A Dual, Class 2–24 intransitive. -ȧsk̓A-tA Plural, Class 2–23 intransitive.
598. sk̓ásI—I *to be hard.* Type B, singular, Class 10 intransitive.
599. sk̓úrú—I *spherical.* Type B, singular, Class 10 intransitive.
600. -sk̓ə́·ˀɜçAI *to turn around.* -ȧisk̓ə́·ˀɜçAI Singular, Class 5–8 intransitive.
601. sk̓ə́r̓I—I *round.* Type B, singular, Class 10 intransitive.
602. -spIkA *to paint.* -î·spIkA Singular, Class 10–7 intransitive.
603. -sṗa·cA *to push.* -ísṗa·cA Class C1 transitive.
604. -sṗáˀák̓acA *to knock at the door.* -ú·sṗáˀák̓acA Singular, Class 1–1 intransitive.
605. -stAyA *to be cold.* -áistAyA (future -áisdaya) Singular, Class 1 intransitive.
606. -stAyA *to be breezy.* -èstAyA (future -èsdaya) Singular, Class 10 intransitive.
607. -st̓i *to give a liquid.* -í/ást̓i(?) Class D3 transitive.
608. -st̓i·çA *city, town.* -áˀá·st̓i·çA Singular, Class 7–15 intransitive.
609. -st̓U *to die.* -ùst̓U Singular, Class 4–3 intransitive.
610. -šA *to step.* -ášA Singular, Class 5–8 intransitive.
611. -šA *to close.* -áˀâ·šA Singular, Class 10–7 intransitive.
612. -še *name.* -á·še Singular, Class 1–1 intransitive.
613. -šé *to be white.* -ášé Singular, Class 1–1 intransitive.
614. -šI *knee.* -ȧšI Singular, Class 1–1 intransitive.
615. -ší·cI *to be hospitable.* -á·ší·cI Singular, Class 8–14 intransitive.
616. -šu *to be wet.* -ȧšu Singular, Class 1–3 intransitive.
617. šúk̓U—I *square.* Type B, singular, Class 10 intransitive.

618. šúpᴀ—ᴀ *to spit.* Type B, singular, Class 1–1 intransitive.
619. -ṣaçᴀ *to name, to call ones name.* -ìṣaçᴀ (-v́v-) Class C1 transitive.
620. ṣáṙ—ᴀ *torn.* Type B, singular, Class 1 intransitive. ṣáṙ—ɪ *torn.* Type B, singular, Class 10 intransitive.
621. ṣúẇɪ—ɪ *crooked.* Type B, singular, Class 10 intransitive.
622. -tᴀ *to kill.* -àutᴀ Singular, Class 9–11 intransitive. -àuda-pⱻ Dual, Class 9–12 intransitive. -á·ẇàtᴀ-wᴀ Plural, Class 5–9 intransitive.
623. -tâ·ṅiçᴀ *to work.* -útâ·ṅiçᴀ Singular, Class 5–8 intransitive. -útâ·niẓa-ṅⱻ Dual, Class 5–10 intransitive. -úẇᴀtâ·ṅiẓa-ṅᴇ Plural, Class 5–9 intransitive.
624. -tɪdʸᴀ *back.* -⁽á⁾tɪdʸᴀ Singular, unclassified intransitive. k̓átɪdʸᴀ *his back.*
625. -tɪgu *to remove many objects.* -ùtɪgu Singular, Class 1–1 intransitive.
626. -tɪka·šᴀ *to climb.* -útɪka·šᴀ Singular, Class 5–8 intransitive.
627. -tɪkᴜyᴀ *to cry.* -àtɪkᴜyᴀ (future. -àtɪguya) Singular, Class 1–3 intransitive.
628. -tɪšᴀ *to talk to* -àtɪšᴀ Class A2 transitive.
629. -tu·ni *to know.* -ùtu·ni Singular, Class 4–3 intransitive.
630. -ṫá *to put in, to write down.* -íṫá Singular, Class 10–7 intransitive.
631. -ṫá *to be full.* -ə́·ṫá Singular, Class 1–3 intransitive.
632. -ṫá *to test, try.* -ú·/á·ṫá Class A1 transitive.
633. -ṫᴀ *to step on.* -î·ṫᴀ(·) Class C2 transitive.
634. -ṫᴀ *to open.* -áˀâ·ṫᴀ Singular, Class 10–7 intransitive.
635. -ṫàdʸɪ *to stand up.* -ə́·ṫàdʸɪ Singular, Class 1–3 intransitive.
636. -ṫi *to give a granular substance.* -í/áṫi(?) Class D3 transitive.
637. -ṫu·dʸᴜ *fence.* -â·ṫu·dʸᴜ Singular, Class 10 intransitive.
638. -wáçᴀšᴀyᴀ *to stir.* -úwáçᴀšᴀyᴀ Singular, Class 1–1 intransitive.
639. wák̓ᴀ—a *to spill.* Type B, singular, Class 10–7 intransitive.
640. -wak̓uiçᴀ *to marry.* -úwak̓uiçᴀ Singular, Class 13–28 intransitive.
641. -wa·sa *to be sick.* -úwa·sa(?) Singular, Class 3–27 intransitive.
642. -wasɪ *to attack, pick a fight.* -âuwa·sɪ Singular, Class 9–11 intransitive.
643. -wa·sdʸᴜ *to watch, guard.* -úwa·sdʸᴜ Singular, Class 1–3 intransitive.
644. -waẇɪ *face.* -úwaẇɪ Singular, unclassified intransitive. k̓úwaẇɪ *his face.*
645. -wi *neck.* -áwi Singular, Class 1–1 intransitive.
646. -wiċɪ *chest.* -áwiċɪ Singular, Class 1–1 intransitive.
647. -wíčá·çᴀ *to listen to.* -ú/áwičá·çᴀ Class A1 transitive.
648. -wísbəṫᴀ *to loosen, untie.* -úwísbəṫᴀ Singular, Class 1–1 intransitive.
649. -wìsk̓ⱻ *blue, green.* -úwìsk̓ⱻ Singular, Class 6–3 intransitive.
650. -wî·stiye *to be happy.* -íwî·stiye(?) Singular, Class 3–27 intransitive.
651. -wíšɪkᴜyᴀ *to scold.* -úwíšɪkᴜyᴀ Class A2 transitive.
652. -wî·ẓa *neck.* -áwî·ẓa Singular, Class 1–1 intransitive.
653. wək̓ⱻ—ᴀ *to move, shake.* Type B, singular, Class 1–1 intransitive.
654. -ẇá *to kill (plural object)* -úẇ/wá Singular, Class 5–8 intransitive.
655. -ẇáċɪ *to approach.* -úẇáċɪ Singular, Class 3–27 intransitive.
656. -ẇaċɪ *to have a turn.* -û·ẇaċɪ Singular, Class 3–27 intransitive.
657. -ẇá·čɪ *tongue.* -áẇá·čɪ Singular, Class 4–3 intransitive.
658. -ẇᴀdʸa *to gather something.* -íẇᴀdʸa(?) Singular, Class 10–7 intransitive.
659. -ẇᴀkⱻ *to dress.* -úẇ/wᴀkⱻ Singular, Class 5–8 intransitive.
660. -ẇànᴇ *to go hunting.* -úẇ/wànᴇ (future -úẇâ·ne·) Singular, Class 5–8 intransitive.
661. -ẇᴀsdá *to be sour.* -áẇᴀsdá Singular, unclassified intransitive. k̓áẇᴀsdá *it is sour.*

662. -ẇàti *man's male in-law.* -áẇàti Singular, Class 7–15 intransitive.

663. -ẇɪ *child.* -â·ẇɪ Singular, Class 7–15 intransitive.

664. -ẇî·č̇ᴀ *claw, fingernail.* -áʔáẇî·č̇ᴀ Singular, Class 10–6 intransitive.

665. ẇínú—ɪ *fast.* Type B, singular, Class 10–6 intransitive.

666. -ẇiʔšᴀ *to fall.* -û·ẇiʔšᴀ Plural, Class 5–9 intransitive.

667. -ẇìšɪ *nose.* -áẇìšɪ Singular, Class 1–1 intransitive.

668. -ẇî·tᴇyᴀ *to worship.* -úẇ/wî·tᴇyᴀ (future -úẇî·deya) Singular Class 5–2 intransitive. -úẇ/wî·deya-pɜ Dual, Class 5–10 intransitive. -úẇ/wî·deya-ᴡᴀ Plural, Class 5–9 intransitive.

669. -yá *to skin an animal.* -úyá Singular, Class 1–1 intransitive. -úyâ·-ṅɜ Dual, Class 1–18 intransitive. -úyâ·-ṅᴇ Plural, Class 1–17 intransitive.

670. -yá *to be born.* -íyá Singular, Class 14–4 intransitive.

671. -yakᴀ *to burn something.* -áyakᴀ Singular, Class 10–7 intransitive.

672. -yaṁᴀsṫᴜ *to be hungry.* -íyaṁᴀsṫᴜ Singular, Class 10–7 intransitive.

673. -yanikᴜyᴀ *to tell, command.* -í/áyanikᴜyᴀ Class C1 transitive.

674. yȧtᴀ—ɪ *to be weak.* Type B, singular, Class 10–6 intransitive.

675. -yá·tɪ *sharp.* -íyá·tɪ Singular, Class 13 intransitive.

676. -yu *hard.* -áyu Singular, Class 1–1 intransitive.

677. -yᴜ *to go.* -éʔèyᴜ Dual, Class 11–26 intransitive.

678. –yû·k̇ᴀᴍɪ *to wait for.* –í/áyû·k̇ᴀᴍɪ Class D6 transitive.

679. -yùtᴀyᴀ *heavy.* -áyùtᴀyᴀ (future -áyùtaya) Singular, Class 1–1

680. -ẏâ·ʔᴀ *to promise, to loan.* -íẏâ·ʔᴀ Singular, Class 4–5 intransitive.

681. -ẏᴀsk̇ᴀ *to sweep.* -áẏ/yᴀsk̇ᴀ Singular, Class 5–8 intransitive.

682. -ẏêiṅᴀ *to find.* -í/áẏêiṅᴀ Class C7 transitive.

683. -ẏêipᴀ *to look for.* -í/áẏêipᴀ Class C2 transitive.

684. -ẏéišíya *to eat.* -ú·ẏéišíya Singular, Class 5–8 intransitive.

685. -ẏúċɪdʸi·cᴀ *to rest.* -úẏúċɪdʸi·cᴀ Singular, Class 5–8 intransitive.

686. -ẏû·ṁɪ *arm.* -áẏû·ṁɪ Singular, Class 1–1 intransitive.

687. -ẏùpɪ *ear.* -áẏùpɪ Singular, Class 1–1 intransitive.

688. -ẏᴜsk̇ᴀ *tail.* -áẏᴜsk̇ᴀ Singular, Class 1 intransitive.

689. -ẏú·spɪ *shoulder.* -áẏú·spɪ Singular, Class 1–1 intransitive.

690. -ẏùtᴀ *to sing.* -úẏ/yùtᴀ Singular, Class 5–8 intransitive.

691. -za *to say.* -⁽á⁾za(?) Singular, Class 7–13 intransitive. -àza(?) Dual, Class 2–24 intransitive. -àziʔi-yᴀ Plural, Class 2–23 intransitive.

692. -zaʔanikᴜyᴀ *to preach.* -úzaʔanikᴜyᴀ (future -úzaʔaniguya) Singular, Class 5–8 intransitive.

693. -záipɜ *shadow.* -ázáipɜ Singular, Class 1 intransitive.

694. -zá·ʔᴀzi *to swim.* -ȧizá·ʔᴀzi(?) Singular, Class 5–8 intransitive.

695. -zé·ṣᴜ *to dream.* -áizé·ṣᴜ Singular, Class 1–3 intransitive.

696. -zi *to lie down.* -àizi(?) Singular, Class 5–8 intransitive.

697. zù—ᴜ (zû·n-) *to go.* Type B, singular, Class 1–1 intransitive.

698. -zúᴡᴀ *to pay.* -í·zúᴡᴀ(·) Class C1 transitive. -ȧizúᴡᴀ(·) Singular, Class 5–8 intransitive.

699. -ẓá·čúᴡᴀ *to awake.* -íẓá·čúᴡᴀ Singular, Class 4–5 intransitive.

700. -ẓa·č̇ᴀ *to fall.* -û·ẓa·č̇ᴀ Singular, Class 1–3 intransitive.

701. -ẓə́ *husband.* -á·ẓə́ Singular, Class 7–15 intransitive.

702. -ẓə̀cᴀ *to run.* -íẓə̀cᴀ Singular, Class 4–5 intransitive.

## AFFIXES AND CLITICS

703. ˀ- Second person hortative. 114H
704. -a- Reflexive-reciprocal. 301
705. -áˀa- Passive voice. 302A
706. -ȧ- Passive voice. 302B
707. -ˀᴇ Plural subject. 502K
708. -ˀᴜ Verbal auxiliary dual subject.
709. c- Third person indicative and negative. 121J 122J
710. c- Second person dubitative and future hortative. 113C 116C
711. ci- Second person dubitative and future hortative. 113B 116B
712. ċ- Third person indicative and negative. 121H 122H
713. ċ- Fourth person subject with third person object, indicative and negative. 131B 132B
714. ċi- Third person indicative and negative. 121I 122I
715. ċi- First person indicative. 101B
716. č- Third person dubitative. 123C
717. čáˀ- Third person dubitative. 123F
718. -čᴀdʸᴀyᴀ Continuative action. 401G
719. č̓- Third person dubitative. 123D
720. č̓- Second person hortative. 114D
721. č̓u- Second person subject with first person object, indicative, negative, dubitative, and future hortative. 151B 152B 153B 156B
722. c̣- Second person dubitative and future hortative. 113A 116A
723. c̣áˀ- Second person dubitative and future hortative. 113D 116D
724. c̣a- First person subject with second person object, dubitative, and future hortative. 143B 146B
725. d- Third person dubitative. 123G
726. d- Second person hortative. 114F
727. -de Plural conditional. 601B
728. -di Locative-instrumental clitic.
729. di- Third person dubitative. 123B
730. di- Fourth person subject with third person object, dubitative. 133A
731. di- Second person hortative. 114G
732. di- Third person subject with second person object, hortative. 174B
733. -dik̓ᴀ Locative-instrumental clitic.
734. -dim̓i Benefactive.
735. dʸ- Third person dubitative. 123A
736. dʸa- Third person dubitative. 123E
737. -dʸanu Narrative past tense clitic.
738. -dʸé·mí Pluralizing clitic.
739. -dʸɪ Dual subject. 501C
740. dʸíd- Second person dubitative and future hortative. 113F 116F
741. dʸídi- Second person dubitative and future hortative. 113G 116G
742. dʸídi- Third person subject with second person object, dubitative and future hortative. 173B 176B
743. dʸu- Second person subject with first person object, indicative, negative, dubitative, and future hortative. 151A 152A 153A 156A
744. dʸə́ẓ- Second person dubitative and future hortative. 113E 116E
745. dʸə́ẓ- Third person subject with second person object, dubitative and future hortative. 173A 176A
746. g- Third person indicative and negative. 121A 122A
747. ga- Third person indicative and negative. 121E 122E

748. gu- Second person subject with first person object, hortative and negative hortative. 154A 155A
749. gə́d- Second person indicative and negative. 111F 112F
750. gə́di- Second person indicative and negative. 111G 112G
751. gə́di- Third person subject with second person object, indicative and negative. 171B 172B
752. gə́ẓ- Second person indicative and negative. 111E 112E
753. gə́ẓ- Third person subject with second person object, indicative and negative. 171A 172A
754. k- Third person indicative and negative. 121C 122C
755. k- First person hortative and negative hortative. 104C 105E
756. ka- First person hortative and negative hortative. 104A 105C
757. káˀ- Third person indicative and negative. 121F 122F
758. káˀ- First person hortative and negative hortative. 104D 105F
759. -kᴜ Continuative action. 401D
760. -kᴜyᴀ Continuative action. 401A
761. k̓- Third person indicative and negative. 121D 122D
762. k̓a- First person hortative and negative hortative. 104B 105D
763. k̓u- Second person subject with first person object, hortative and negative hortative. 154B 155B
764. -mᴀ Remote state. 403
765. -mᴇ Plural subject. 502E
766. -mi Benefactive.
767. -mí Direction toward.
768. -mətɪ Dual subject. 501E
769. -m̓ᴀ Verbal auxiliary suffix.
770. -m̓ᴀsᴀ Plural subject. 502F
771. -m̓ᴀṣᴜtɪ Dual subject. 501F
772. m̓é.- Augmentative.
773. -m̓ᴇ Plural subject. 502D
774. -m̓ᴇ Suffixed to place names to indicate inhabitants of that place.
775. -m̓i Benefactive.
776. -m̓ᴈ Dual subject. 501D
777. n- First person hortative, negative hortative, and future hortative. 104G 105G 106C
778. n- Future tense. 201A
779. -námí Direction toward.
780. -nani Nominalizer.
781. -ne Conditional. 601A
782. -nᴇ Plural subject. 502B
783. -nᴇ Unfulfilled action. 402B
784. ni- First person hortative, negative hortative, and future hortative. 104E 105A 106A
785. ni- Future tense. 201B
786. -ni Benefactive.
787. -ni Nominalizer.
788. -ni Direction from.
789. níˀ- First person hortative, negative hortative, and future hortative. 104I 105I 106E
790. níˀ- Future tense. 201E
791. -nikᴜyᴀ Continuative action. 401B
792. -nu· Conditional. 602

793. nə́d- First person hortative, negative hortative, and future hortative. 104K 105K 106G
794. nə́d- Future tense. 201G
795. nə́di- First person hortative, negative hortative, and future hortative. 104L 105L 106H
796. nə́di Third person subject with first person object, hortative, negative hortative, and future hortative. 164B 165B 166B
797. -nətɪ Dual subject. 501B
798. nə́ẓ- First person hortative, negative hortative, and future hortative. 104J 105J 106F
799. nə́ẓ- Third person subject with first person object, hortative, negative hortative, and future hortative. 164A 165A 166A
800. nə́ẓ- Future tense. 201F
801. ṅ- First person hortative, negative hortative, and future hortative. 104H 105H 106D
802. ṅ- Future tense. 201C
803. -ṅᴇ Plural subject. 502A
804. -ṅᴇ Unfulfilled action. 402A
805. -ṅᴇ Verbal auxiliary conditional.
806. ṅi- First person hortative, negative hortative, and future hortative. 104F 105B 106B
807. ṅi- Future tense. 201D
808. -ṅɪ Nominalizer.
809. -ṅⱻ Dual subject. 501A
810. p- Third person hortative, negative hortative, and future hortative. 124C 125C 126C
811. p- Second person hortative. 114A
812. pa- Third person hortative, negative hortative, and future hortative. 124E 125E 126E
813. páʔ- Third person hortative, negative hortative, and future hortative. 124F 125F 126F
814. pi- Third person hortative, negative hortative, and future hortative. 124A 125A 126A
815. pi- Second person hortative. 114B
816. píʔ- Third person hortative, negative hortative, and future hortative. 124G 125G 126G
817. -pⱻ Dual subject. 501H
818. ṗ- Third person hortative, negative hortative, and future hortative. 124D 125D 126D
819. ṗi- Third person hortative, negative hortative, and future hortative. 124B 125B 126B
820. ṗi- Fourth person subject with third person object, hortative, negative hortative, and future hortative. 134 135 136
821. rə́·- Diminutive.
822. s- First person indicative. 101C
823. -sᴀ Verbal auxiliary plural subject.
824. -sᴇ Plural subject. 502M
825. si- First person indicative. 101A
826. -si Locative-instrumental clitic.
827. síʔ- First person indicative. 101F
828. -sⱻ Continuative action. 401F
829. sə́d- First person indicative. 101H
830. sə́ẓ- First person indicative. 101G

831. sč- Indefinite subject. 181C
832. sč- First person negative. 102J
833. sč- Second person negative hortative. 115J
834. sč̓- Indefinite subject. 181D
835. sč̓- First person negative. 102H
836. sč̓- Second person negative hortative. 115H
837. sč̓- Third person subject with first person object, negative. 162B
838. sč̓- Third person subject with second person object, negative hortative. 175B
839. sč̓i- First person negative. 102I
840. sč̓i- Second person negative hortative. 115I
841. sdʸ- First person negative. 102G
842. sdʸ- Second person negative hortative. 115G
843. sdʸ- Third person subject with first person object, negative. 162A
844. sdʸ- Third person subject with second person object, negative hortative. 175A
845. sdʸi- First person negative. 102B
846. sdʸi- Second person negative hortative. 115B
847. sg- First person negative. 102A
848. sg- First person indicative. 101I
849. sg- Second person negative hortative. 115A
850. sg- Indefinite subject. 181A
851. sg- Third person subject with first person object, indicative. 161A
852. sga- First person negative. 102E
853. sga- Second person negative hortative. 115E
854. sk- First person negative. 102C
855. sk- Second person negative hortative. 115C
856. skáˀ- First person negative. 102F
857. skáˀ- Second person negative hortative. 115F
858. sk̓- Indefinite subject. 181B
859. sk̓- First person negative. 102D
860. sk̓- Second person negative hortative. 115D
861. sk̓u- First person indicative. 101J
862. sk̓u- Third person subject with first person object, indicative. 161B
863. st- First person hortative and negative hortative. 104O 105O
864. stíˀ- First person hortative and negative hortative. 104P 105P
865. st̓i- First person hortative and negative hortative. 104Q 105Q
866. ṡ- First person indicative. 101D
867. ṡi- First person indicative. 101E
868. š- Second person indicative and negative. 111C 112C
869. š- First person hortative and negative hortative. 104M 105M
870. -šé Nominalizing clitic.
871. -šᴇ Plural subject. 502I
872. -ši Locative-instrumental clitic.
873. -šɪ Plural subject. 502J
874. ši- Second person indicative and negative. 111B 112B
875. ṧ- First person hortative and negative hortative. 104N 105N
876. ṣ- Second person indicative and negative. 111A 112A
877. ṣa- First person subject with second person object, indicative, negative, hortative, and negative hortative. 141A 142A 144A 145A
878. -ṣanu Narrative past tense clitic.
879. -ṣʊtɪ Dual subject. 501G
880. ṩ- Second person indicative and negative. 111D 112D

881. ṣa- First person subject with second person object, indicative, negative, hortative, and negative hortative. 141B 142B 144B 145B
882. t- First person dubitative. 103C
883. t- Third person dubitative. 123J
884. -tᴀ Continuative action. 401E
885. -tᴀ Plural subject. 502C
886. táʔ- First person dubitative. 103D
887. -tá·ṅɪ Nominalizer.
888. -tᴇ Plural negative. 603
889. ti- First person dubitative. 103A
890. tíʔ- First person dubitative. 103H
891. -tɪkᴜyᴀ Continuative action. 401C
892. tə́d- First person dubitative. 103F
893. tə́di- First person dubitative. 103G
894. tə́di- Third person subject with first person object, dubitative. 163B
895. tə́ẓ- First person dubitative. 105E
896. tə́ẓ- Third person subject with first person object, dubitative. 163A
897. ṫ- Third person dubitative. 123H
898. ṫ- Fourth person subject with third person object, dubitative. 133B
899. ṫ- Second person hortative. 114C
900. ṫi- First person dubitative. 103B
901. ṫi- Third person dubitative. 123I
902. -wa Numeral suffix.
903. -ᴡᴀ Plural subject. 502G
904. -ᴡᴇ Plural subject. 502H
905. -ᴡᴇ Unfulfilled action. 402C
906. -wi Benefactive.
907. -wi Nominalizer.
908. -ya Numeral suffix.
909. -yᴀ Plural subject. 502L

## LOANWORDS

910. ʔamá·ᴅᴜ *pillow.* Spanish *almohada.*
911. ʔaraʙigú· *apricot.* Sp. *albaricoque.*
912. ʔará·ru *plow.* Sp. *arado.*
913. ʔarû·ꜱᴀ *rice.* Sp. *arroz.*
914. ʔayuná· *lent, fast.* Sp. *ayunar.*
915. ʔisbá·ri *sword.* Sp. *espada.*
916. ʔisdû·pᴀ *stove.* Sp. *estufa.*
917. ʙagê·tᴀ *leather.* Sp. *vaqueta.*
918. ʙanᴅé. *basin, tin cup.* Sp. *bandeja.*
919. ʙá·ra *bullet.* Sp. *bala.*
920. ʙâ·ꜱᴀ *drinking glass.* Sp. *vaso.*
921. ʙendá·na *window.* Sp. *ventana.*
922. ʙidaʙé· *beets.* Sp. *betabel.*
923. ʙú·ɢi *buggy.*
924. ʙúiyasɪ *oxen.* Sp. *buey.*
925. ba· *bread.* Sp. *pan.*
926. bá·ni *cloth.* Sp. *paño.*

927. bá·skᴜ *feast, holy day.* Sp. *pascua.*
928. bá·ṣᴜ *straw.* Sp. *paja.*
929. bèla *pear.* Sp. *pera.*
930. bicû·tɪ *pig.* Nahuatl *pitzotl.*
931. bisâ·ri *blanket, rug.* Sp. *pisar.*
932. bisgá·ri *church officer.* Sp. *fiscal.*
933. blâ·sᴀ *city.* Sp. *plaza.*
934. dábû·pᴜ *governor.* Zuni *ta·pu·pu.*
935. dá·sᴀ *cup.* Sp. *taza.*
936. dasašú·na *taxes.* Sp. *tasación.*
937. dúdá̓čɪ *priest.* Nahuatl *totatzin.*
938. dumî·kᴜ *Sunday.* Sp. *domingo.*
939. dunaʙí. *automobile.* Sp. *automóvil.*
940. dʸé·nda *store.* Sp. *tienda.*
941. ɢayê·tᴀ *biscuit.* Sp. *galleta.*
942. gagawâ·tɪ *peanut.* Sp. *cacahuate.*
943. gahé·ra *drummer.* Sp. *cajero* (?).
944. gahú·na *box.* Sp. *cajón.*
945. gamâ·tᴜ *bed.* Sp. *cama* (?).
946. ganâ·stɪ *basket, nest.* Sp. *canasta.*
947. gané·ru *sheep.* Sp. *carnero.*
948. gapé. *coffee.* Sp. *café.*
949. gasî·kɪ *high priest, king.* Sp. *cacique.*
950. gá·silu *jail.* Sp. *cárcel.*
951. gá·ṣᴜ *box.* Sp. *caja.*
952. gawâ·yu *horse.* Sp. *caballo.*
953. gawiyâ·ra *herd of horses.* Sp. *caballada.*
954. gayawarî·sᴀ *barn.* Sp. *caballeriza.*
955. guʙê·ntᴀ *church.* Sp. *convento.*
956. gú·li *cabbage.* Sp. *col.*
957. gumunirá· *jail.* Sp. *comandancia.*
958. gunžú· *mattress.* Sp. *colchon.*
959. gurá· *corral.* Sp. *corral.*
960. guyá·ri *yoke, horse collar.* Sp. *collera.*
961. haʙú· *soap.* Sp. *jabón.*
962. hiɢâ·ntɪ *giant.* Sp. *gigante.*
963. hua *John.* Sp. *Juan.*
964. húiʙisɪ *Thursday.* Sp. *jueves.*
965. hú·runa *outdoor oven.* Sp. *horno.*
966. kasdí·ra *Mexican, Spanish-American.* Sp. *Castilla.*
967. kisá· *stew.* Sp. *guisado.*
968. lé·ba, ré·ba *coat.* Sp. *leva.*
969. lelû·sᴀ *watch, clock.* Sp. *reloj.*
970. má·disɪ *Tuesday.* Sp. *martes.*
971. madí·ya *hammer.* Sp. *martillo.*
972. mé·gurišɪ *Wednesday.* Sp. *miércoles.*
973. merigá·na *Anglo-American.* Sp. *americano.*
974. merû·ni *melon.* Sp. *melón.*
975. mé·sᴀ *table.* Sp. *mesa.*
976. mê·strᴜ *teacher.* Sp. *maestro.*
977. mísᴀk̓ái *church.* Sp. *misa* plus native -k̓ái.
978. mú·la *mule.* Sp. *mulo.*
979. murâ·tᴜ *Negro.* Sp. *mulato.*

980. mú·sᴀ *cat.* Sp. *moza.*
981. naʙá·hᴜ *pocket knife.* Sp. *navaja.*
982. narán *orange.* Sp. *naranja.*
983. nurâ·sɪ *peach.* Sp. *durazno.*
984. nužuwé·nu *Christmas.* Sp. *Nochebuena.*
985. regesú. *cream.* Sp. *requesón.*
986. resá· *prayer.* Sp. *rezar.*
987. reyâ·tᴜ *rawhide rope.* Sp. *reata.*
988. rígusɪ *rich.* Sp. *rico.*
989. rû·kᴜ *crazy.* Sp. *loco.*
990. rú·nišɪ *Monday.* Sp. *lunes.*
991. rusá·yu *beads.* Sp. *rosario.*
992. sagisdá·na *sacristan.* Sp. *sacristán.*
993. sanᴅí·ya *watermelon.* Sp. *sandía.*
994. sandiyâ·kᴜ *St. James.* Sp. *Santiago.*
995. sá·waru *Saturday.* Sp. *sábado.*
996. semî·tᴜ *bread.* Sp. *semita.*
997. serê·sᴜ *cherry.* Sp. *cereza.*
998. siʙiyú. *bird.* Sp. *silbar.*
999. sirawé· *plum.* Sp. *ciruela.*
1,000. siyê·tᴀ *chair.* Sp. *silleta.*
1,001. sunᴅá·ru *soldier.* Sp. *soldado.*
1,002. wá·gašɪ *cow.* Sp. *vaca.*
1,003. wanišú· *harness.* Sp. *guarniciones.*
1,004. wará· *something saved.* Sp. *guardar.*
1,005. yé·nasɪ *Friday.* Sp. *viernes.*
1,006. ží·ri *chili.* Sp. *chile.*
1,007. žiriyú· *whip.* Sp. *chirrión.*

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# OBSERVATIONS ON CERTAIN ANCIENT TRIBES OF THE NORTHERN APPALACHIAN PROVINCE

By BERNARD G. HOFFMAN

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# OBSERVATIONS ON CERTAIN ANCIENT TRIBES OF THE NORTHERN APPALACHIAN PROVINCE

By Bernard G. Hoffman

## INTRODUCTION

This paper is the outcome of a detailed study conducted on the relationships between certain little-known tribes of the Appalachian region which are implied or indicated by the historical sources. The method employed is based upon the logical proposition that if A implies B, and B implies C, then A implies C, and consists simply of attempting to establish the identity of various pairs of the tribes in question and then of studying the relationships implied by these interconnections.

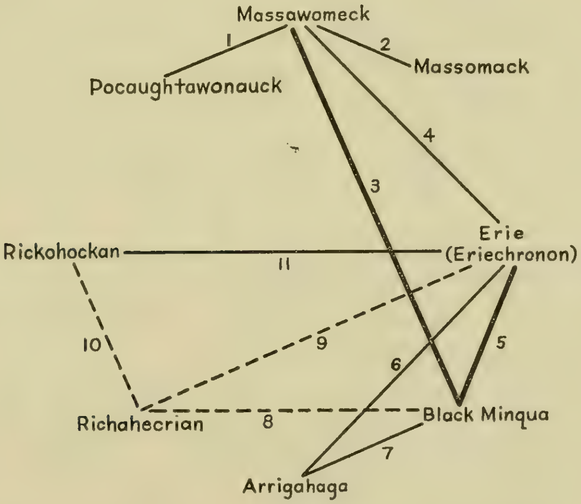

Massawomeck
1
2
Massomack
Pocaughtawonauck
4
3
Erie
(Eriechronon)
Rickohockan
11
10
9
5
6
Richahecrian
8
Black Minqua
7
Arrigahaga

Figure 16.—Diagram of name relationships.

This procedure can be expressed graphically in a diagram such as that presented in figure 16, which depicts the relationships to be discussed. The point of entry here was a consideration of the name

Massawomeck, and of its possible synonyms, and proceeded to a consideration of the synonyms of the synonyms. This led respectively to a consideration of such names as Pocaughtawonauck, Massomack, Erie, Black Minqua, Arrigahaga, Richahecrian, Rickohockan, and even of such groups as the Nayssone, Monocan, Mannahoack, and Saponi. In the course of this exploration a number of longstanding problems and disputes emerged in a new light, and a number of previous concepts were revealed as inaccurate. It is the purpose of this report to present the evidence and conclusions thus assembled and arrived at, and to indicate the implications of this material.

## EVIDENCE FOR RELATIONSHIPS

### 1. POCAUGHTAWONAUCK-MASSAWOMECK CONNECTION

The Pocaughtawonauck Indians first are referred to on the so-called Anonymous-Zuñiga map (pl. 26) dating from c. 1608, which was apparently drafted in the Virginia Colony, sent to England, acquired in copy or original by Spanish spies, and sent to Philip III by the Spanish ambassador to England, Don Pedro de Zuñiga.

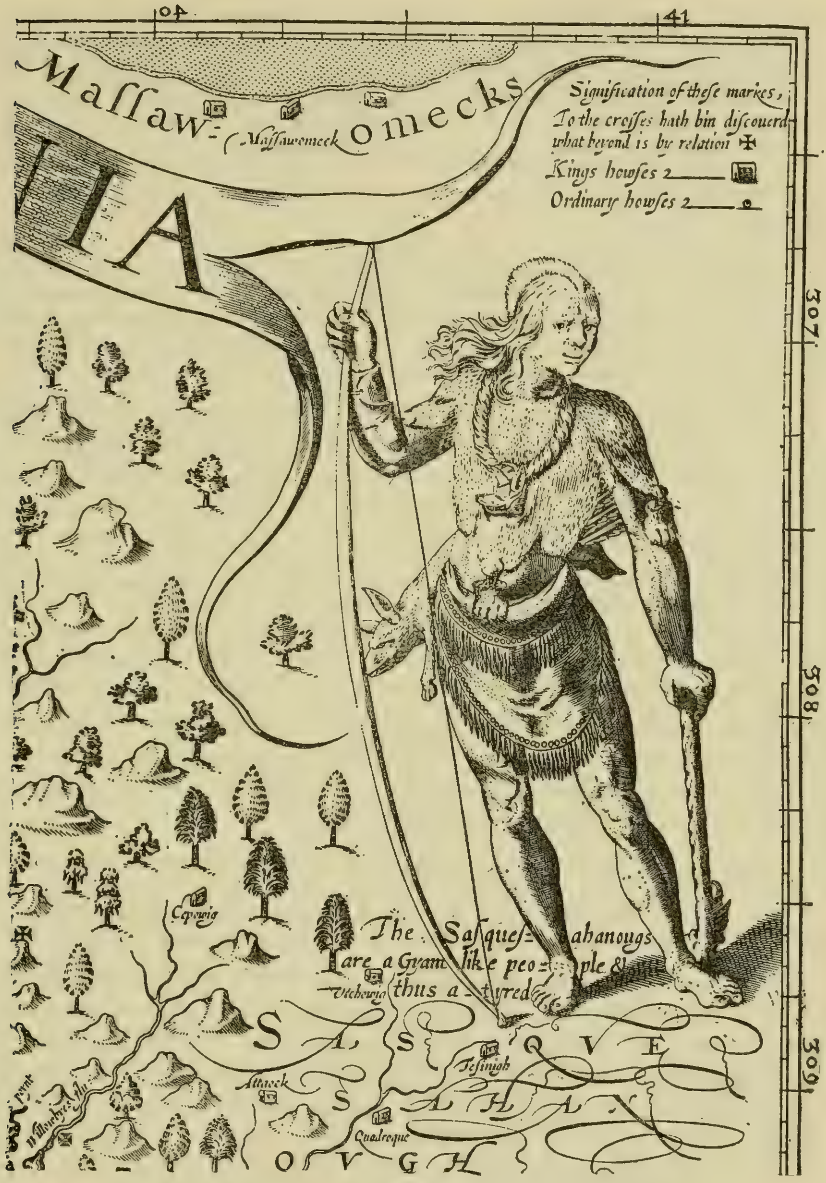
The map depicts Tidewater Virginia and North Carolina between Cape Lookout and the Potomac River, and reflects not only the current English knowledge of the Virginia coastal plain, but also the current belief in a sea or ocean west of the mountains at the headwaters of the Virginia rivers. West of the head of the Rappahanock River (which can be identified through comparison with map 4, the printed John Smith map of 1612), the Anonymous-Zuñiga map displays a legend reading:

> Pocaughtawonaucks, a salvage people dwelling upon the bay beyond this mayne that eat of men and women. [Brown, 1890, vol. 1, pp. 183–185.]

This legend can be compared with John Smith's comments in his "True Relation" of 1608, where he states

> [that Powhatan] described also vpon the same Sea, a mighty Nation called Pocoughtronack, a fierce Nation that did eate men, and warred with the people of Moyaoncer [Moyaones, of the Piscataway] and Pataromerke [Potomac], Nations vpon the toppe of the head of the Bay, vnder his territories; where the yeare before they had slain an hundred. He signified their crownes were shaven, long haire in the necke, tied on a knot, Swords like Pollaxes. [Smith, 1884, p. 20.]

In his famous printed map of 1612, however, Smith no longer uses the name "Pocaughtawonauck." In its place, beyond the supposed headwaters of the Potomac and the Rappahanock, he has the name "Massawomeck" signifying a people of whose existence he first


40
41
Massaw-omecks
Massawomeck
IA
Signification of these markes,
To the crosses hath bin discouerd
what beyond is by relation ✠
Kings howses 2
Ordinary howses 2
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308
309
Cepowig
The Sasquesahanougs are a Gyant like people & thus atyred
Utchowig
Attaock
Tesinigh
Quadroque
SASQVESAHANOVGH
Willowbyes riu
poynt

Map 4.—Facsimile of section of John Smith's map of 1612.

became aware while visiting the Nanticokes and Wiccomiss in 1608. In his later accounts of his travels he stated:

> Beyond the mountaines from whence is the head of the river *Patawomeke*, the Savages report, inhabit their most mortall enemies, the *Massawomekes*, vpon a great salt water, which by all Likelyhood is either some part of *Cannada*, some

> great lake, or some inlet of some sea that falleth into the South sea. These *Massawomekes* are a great nation and very populous. For the heads of all these rivers, especially the *Patawomekes* [Potomacs], the *Pautuxuntes* [Patuxents], the *Sasquesahanocks* [Susquehannocks], the *Tockwoughes* [Wiccomiss], are continually tormented by them. . . . [Smith, 1624; 1884, pp. 71, 367.]

In the course of his 1608 exploration of the upper Chesapeake Bay, John Smith actually did encounter seven canoes containing Massawomeck warriors:

> . . . whose Targets, Baskets, Swords, Tobaccopipes, Platters, Bowes and Arrowes, and every thing shewed, they much exceeded them of our parts: and their dexteritie in their small boats, made of the barkes of trees sowed with barke, and well luted with gumme, argueth that they are seated vpon some great water. [Smith, 1884, pp. 72, 367; see also pp. 349, 350, 422, 427–428.]

Since John Smith never uses these two names together in the same text, it would appear that Pocaughtawonaucks was a Powhatan name which he later dropped in favor of Massawomeck, a Nanticoke or Wiccomiss name. In his description of the peoples and languages surrounding the Powhatan confederacy, for example, he states:

> Amongst those people are thus many severall nations of sundry languages, that environ *Powhatans* Territories. The *Chawonokes*, the *Mangoags*, the *Monacans*, the *Mannahokes*, the *Masawomekes*, the *Powhatans* [sic], the *Sasquesahanocks*, the *Atquanachukes*, the *Tockwoghes*, and the *Kuscarawaokes*. Al those not any one vnderstandeth another but by Interpreters . . . . [Smith, 1884, pp. 55, 351.]

In contrast to Smith, William Strachey treats these two names as if they were separate and distinct, informing us in his "The Historie of Travell into Virginia Britania . . . (1612)" that Powhatan's territory extended to the southwest as far as

> . . . *Anoeg* . . .: West to *Monahassanugh* [of Monacan], which stands at the foote of the mountaines . . .; Nor-west to the borders of *Massawomeck* and *Bocootawwonaugh:* Nor-east and by East to *Accohanock*, *Accowmack*, and some other petty nations, lying on the east side of our bay . . . . [Strachey, 1849, pp. 48–49.]

However, since Strachey does not mention either the Mannahoke or the Susquehannock, his account would seem to be less accurate and reliable than John Smith's. The equivalence of the two names "Pocaughtawonauck" and "Massawomeck" may be regarded as highly probable, although it cannot be considered to be established absolutely.

## 2. MASSAWOMECK-MASSOMACK CONNECTION

Evidence for the equivalence of the names Massawomeck and Massomack derives in part from the similarity in the names and in part from the similarities in location, activity, and relationship with the colonists indicated by the sources. The similarity in the names is evident. The information given by John Smith places the Massawomeck in the mountains west of the Potomac. The sources referring to the Massomack indicate a similar location, and reveal other similarities.

The earliest pertinent reference derives from the "Relation of Virginea" written by Henry Spelman, who was held captive by the Virginia Indians between 1609 and 1610. Spelman tells us (*in* Smith, 1884, p. cxiv):

> In y^e time I was ther I saw a Battell fought betwene the Patomeck and the Masomeck, ther place wher they fought was a marish ground full of Reede. Beinge in the cuntry of the Patomecke the peopel of Masomeck weare brought thether in Canoes which is a kind of Boate they haue made in the forme of an Hoggs trowgh But sumwhat more hollowed in, On Both sids they scatter them selues sum little distant one from the other, then take them ther bowes and arrows and hauinge made ridie to shoot they softly steale toward ther enimies, Sumtime squattinge doune and priinge if they can spie any to shoot at whom if at any time he so Hurteth that he can not flee they make hast to him to knock him on the heade, And they that kill most of ther enimies are heald the cheafest men amonge them; Drums and Trumpetts they haue none, but when they will gather themselues togither they haue a kind of Howlinge or Howbabub so differinge in sounde one from the other as both part may uery aesely be distinguished. Ther was no greater slawter of nether side But y^e massomecks having shott away most of ther arrows and wantinge Vitall [was] weare glad to retier.

The next reference dates from 1632, at which time English traders were actively engaged in transporting trade goods up the Potomac to the Anacostia Indians, who in turn traded these goods to the Massomack living to the west in exchange for furs. Our source here is the manuscript journal written by Capt. Henry Fleet, entitled "A Brief Journal of a voyage made in the Bark Virginia, to Virginia and other parts of the continent of America," preserved in the library of the Archbishop of Canterbury and published in Neill (1876, pp. 10–19).

The Fleet journal informs us that at the time of Fleet's trading expedition in 1631 there was

> . . . but little friendship between the Emperor [of Piscatoway], and the Nacostines, he being fearful to punish them, because they are protected by the Massomacks or Cannyda Indians, who have used to convey all such English truck as cometh into the river to the Massomacks . . . . [Ibid., p. 25.]

Having established contact with Massomacks while at Anacostia, Fleet sent his brother with two Indian companions into their country, the journey taking 7 days from the falls of the Potomac and 5 days on the return, and lasting, all told, from June 14 to July 3, 1631. Fleet had learned from the Massomacks at Anacostia that

> . . . the Indians of that populous place are governed by four Kings, whose towns are of several names, Tonhoga, Mosticum, Shaunetowa, and Usserahak, reported above thirty thousand persons, and that they have palisades about the towns made with great trees, and scaffolds upon the walls . . . . [Ibid., p. 27.]

Upon his return from the Massomack country, Fleet's brother confirmed this picture of fortified villages with large populations and—more important to Fleet—reported the existence of great stocks of furs. Seven days later, on the 10th of July, a party of Massomack arrived to trade with Fleet.

> . . . These were laden with beaver, and came from a town called Usserahak, where were seven thousand Indians. I carried these Indians aboard, and traded with them for their skins. They drew a plot of their country, and told me there came with them sixty canoes, but were interrupted by the Nacostines who always do wait for them, and were hindered by them . . . . [Ibid., pp. 29–30.]

The following day

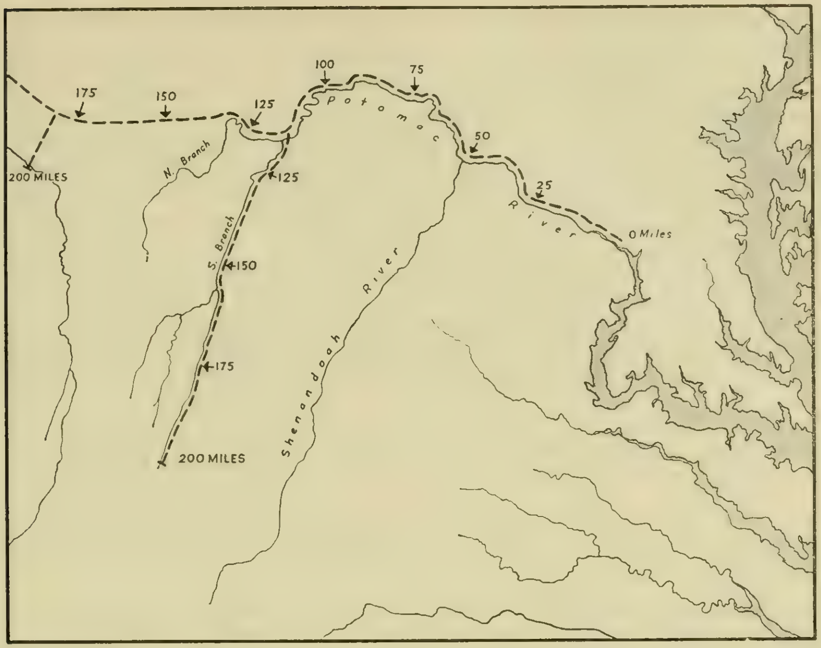
> . . . there came from another place seven lusty men, with strange attire; they had red fringe, and two of them had beaver coats, which they gave me. Their language was haughty, and they seemed to ask me what I did there, and demanded to see my truck, which, upon view they scorned . . . these Indians, after they came aboard, seemed to be fair conditioned, and one of them, taking a piece of chalk, made a plain demonstration of their country, which was nothing different from the former plot drawn by the other Indians. These called themselves Mosticums, but afterwards I found they were of a people three days' journey from these, and were called Hereckeenes, who, with their own beaver, and what they get of those that do adjoin upon them, do drive a trade in Cannida, at the plantation which is fifteen days' journey from this place . . . . [Ibid., pp. 30–31.]

However, Fleet was informed by one of the Hereckeenes "that they were a people of one of the four aforenamed nations." All of these peoples—of Tonhoga, Mosticum, Shaunetowa, Usserahak, and also the Hereckeenes—were designated as "cannibals" by the Tidewater Indians (ibid., pp. 31, 33, 35).

Although Spelman and Fleet use only the name Massomacks, the name Massawomeck was apparently still in use and was used to designate what would seem to be the same group. In Leonard Calvert's letter of May 30, 1634, to Sir Richard Lechford, discussing the state of the fur trade, the former wrote:

> . . . The nation we trade withal at this time a-year is called the Massawomeckes. This nation cometh seven, eight, and ten days journey to us—these are those from whom Kircke had formerly all his trade of beaver. We have lost by our late coming 3000 skins, which others of Virginia have traded for . . . . [Morrison, 1921, p. 224.]

If we assume that Calvert is calculating his distances from the lower falls of the Potomac, the distances (or rather, times of travel) agree with Fleet's statements (see map 5). Assuming a travel rate of 20 miles a day going upstream, we would have a distance of 140 miles in the case of Fleet's brother. Assuming that the return trip covered the same route and distance we see that the return rate of travel would be 28 miles a day. This rate is plausible if traveling were by canoe, but not if on foot. The Indians, however, seem to



Map 5.—Possible Potomac route of Captain Fleet's brother.

have traveled this route by canoe at least as far down as the Great Falls of the Potomac. Accepting 100 miles as the minimal distance indicated and 200 miles as the maximum, the Massomack or Massawomeck Indians would seem to have resided on the headwaters of the Potomac or on the Youghiogheny branch of the Monongehela.

## 3. MASSAWOMEC-BLACK MINQUA CONNECTION

With the establishment of the Swedish colony on the Delaware a new set of tribal names makes its appearance in the historical sources, and this new nomenclature eventually becomes predominant. Those names of particular concern to us are "Black Minqua" and "White Minqua."

In a letter dated June 11, 1644, in which he discusses future Indian policy, Johan Printz, the governor of the Swedish colony, stated that:

> . . . when we have thus not only bought this river, but also won it with the sword, then no one, whether he be Hollander or Englishman, could pretend in any manner to this place either now or in coming times, but we should then have the beaver trade with the Black and White Minquas alone, four times as good as we have had it, now or at any past time . . . . [Johnson, 1930, p. 117.]

In a letter dated February 20, 1647, Printz repeatedly refers to the Black and White Minqua and to their position in the fur trade.

> Concerning the trade in the year 1644, when the ship *Fama* went from here, [it can be said that] there was very little of the cargo left in store; and as we have been without merchandise ever since, not only has the Right Company suffered the great damage that 8 [000] or 9000 beavers have passed out of our hands, but besides, the Hollanders have drawn the principal traders (who are the White and Black Minquas) from us, that we shall be able only with great difficulty to regain them. . . .
>
> The Savages now have war amongst themselves in many places, more to the prejudice than to the advantage of the beaver-trade. . . .
>
> If we are able to renew our friendly relations with the White and Black Minquas (as we hope and are assured we shall), the trade with these will commence next April and continue the whole summer until fall. [Johnson, 1930 pp. 132, 136–7, 140.]

In a letter of April 26, 1653, Printz seems to refer to these same Indians, but uses different names.

> . . . from the fur trade [there is] no profit any more, and especially now since the Arrigahaga and Susquahannoer (from whom the beavers come) begin to fight one another. [Ibid., p. 188.]

Later authors provide still further details. Adriaen Van der Donck, writing in 1653, makes it clear that the name "Minqua" refers to an Iroquoian-speaking people.

> Their various tongues may be classed into four distinct languages, namely, *Manhattan*, *Minquas*, *Savanoos*, and *Wappanoos*. . . . With the Minquas we include the Senecas, the Maquaas, and other inland tribes. . . .

He also informs us that

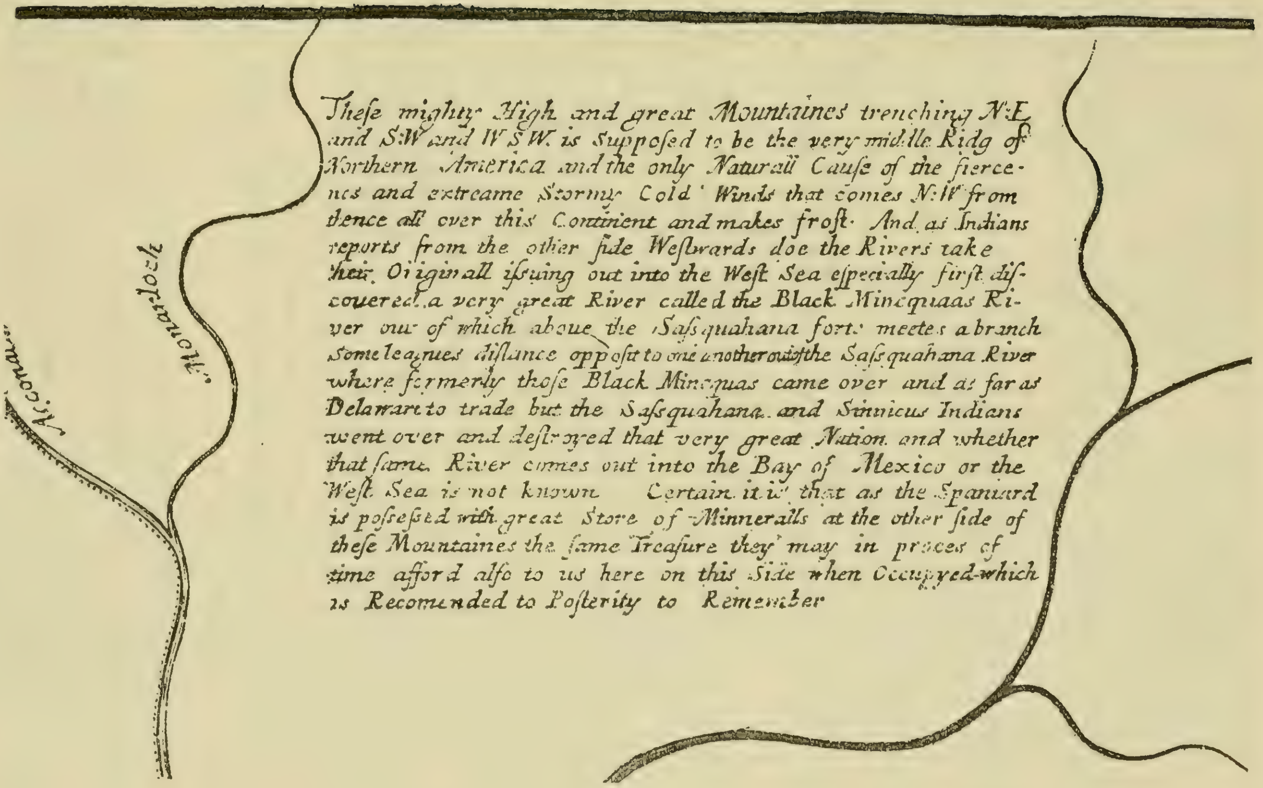
> The beavers are mostly taken far inland, there being few of them near the settlements—particularly by the black Minquas, who are thus named because they wear a black badge on their breast, and not because they are really black. [Van der Donck, 1841, pp. 206, 209.]

In 1662 William Beeckman, writing from Tinnekunk [or Altena, now New Castle, Del.] to the New York authorities to inform them about the status of the Susquehannock–New York Iroquois war, stated that

> . . . five Mincquas chiefs had arrived there and were expecting assistance shortly of 800 Black Mincquas, 200 in fact having arrived, to fight the Sinnecus in the Spring. [Fernow and O'Callaghan, eds., 1853–87, vol. 12, p. 419; Hazard 1852–1935, vol. 7, p. 742).

We also have an interesting comment by Peter Lindeström in his "Geographia Americae," compiled from notes collected between 1654 and 1656, to the effect that:

> This country extends inland of which we do not [know] the limit, but it is supposed to be a continent. Neither have the Swedes yet had any trade or intercourse with savages, or any other savage nation who lived further in the



Theſe mighty High and great Mountaines trenching N:E and S:W and W S W. is Suppoſed to be the very middle Ridg of Northern America and the only Naturall Cauſe of the fierceness and extreame Stormy Cold Winds that comes N:W from thence all over this Continent and makes froſt. And as Indians reports from the other ſide Weſtwards doe the Rivers take their Originall iſsuing out into the Weſt Sea eſpecially firſt diſcovered a very great River called the Black Minequaas River out of which above the Saſsquahana fort meetes a branch Some leagues diſtance oppoſit to one another out of the Saſsquahana River where formerly thoſe Black Minequas came over and as far as Delaware to trade but the Saſsquahana and Sinnicus Indians went over and deſtroyed that very great Nation and whether that ſame River comes out into the Bay of Mexico or the Weſt Sea is not known Certain it is that as the Spaniard is poſseſsed with great Store of Minneralls at the other ſide of theſe Mountaines the ſame Treaſure they may in proces of time afford alſo to us here on this Side when Occupyed which is Recomended to Poſterity to Remember

Map 6.—Facsimile of legend of Augustine Herrman's map of 1673.

> [interior of the] country than the Black and White Minquesser, who also do not know any limit to the country, but as far as they have been inland [they have found that] the country is occupied by savage nations alongside of nations of various kinds. [Lindeström, 1925, p. 166.]

The identity of the White Minqua, or simply Minqua, is easily established. From the information given by Printz and other writers, as well as from the statement made by Thomas Campanius Holm that

> [the Minquas] lived at the distance of twelve [Swedish] miles [or 84 English miles] from New Sweden. [Holm, 1834, p. 157.]

there is general consensus that these Indians were the Susquehannock of the Susquehanna river.

The identity of the Black Minqua is indicated fairly explicitly by the Augustine Herrman map of 1673 (map 6), which displays a legend west of the headwaters of the Potomac and the Susquehanna reading:

> These mighty High and great Mountaines trenching N:E and S:W and WSW [the Appalachians] is supposed to be the very middle Ridg of Northern America. . . . And as Indians reports from the other side Westwards doe the Rivers take their Origin all issuing out into the West Sea especially first discouered a very great River called the Black Mincquaas River [the Ohio] out of which aboue the Sassquahana fort meetes a branch [the Conemaugh?] some leagues distance opposit to one another out of the Sassquahana River [the Juniata] where formerly those Black Mincquas came over and as far as Delaware to trade but the Sassquahana and Sinnicus Indians went over and destroyed that very great Nation. [Herrman, 1673.]

A comparison of the location of the Black Minqua on the Herrman map with the location of the Massawomeck on the John Smith map suggests that these two names identify one and the same people. The John Lederer map of 1672 (map 7) seems to confirm this, for it displays a legend west of the headwaters of the Rappahanock River—

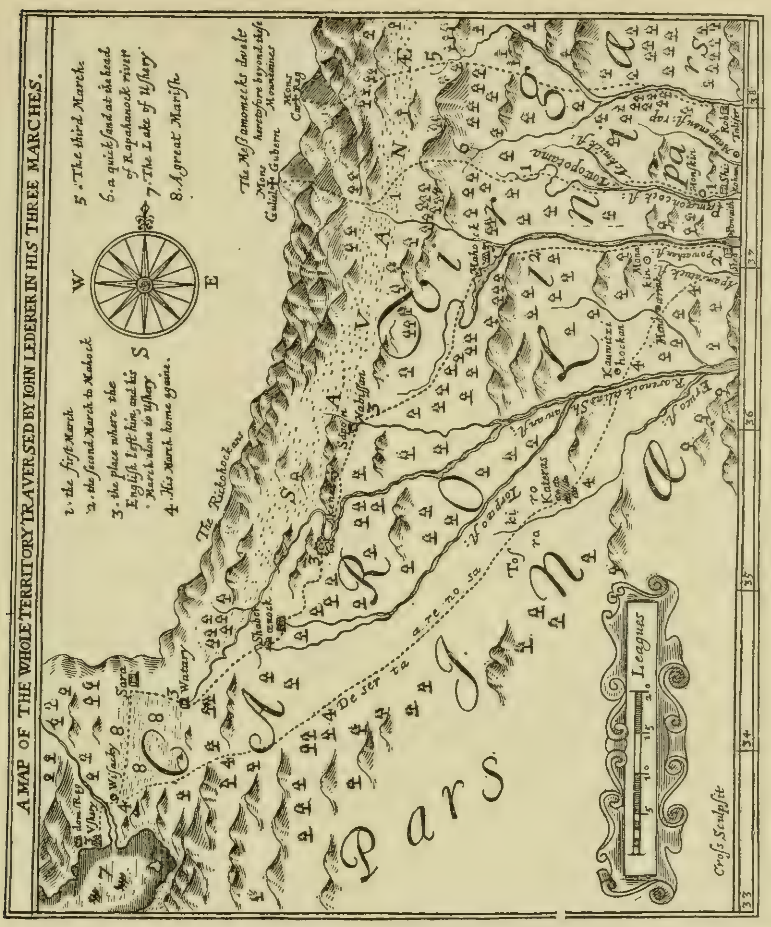
> The Messamomecks dwelt heretofore beyond these Mountaines.

The equivalence of the names Massawomeck and Black Minqua thus seems to be indicated strongly.

### 4. MASSAWOMECK-ERIE CONNECTION

Evidence relating to the possible equivalence of the names Massawomeck and Erie is scanty, being limited to the general correlation of the position indicated for the Massawomeck by the Smith and Lederer maps with that indicated for the Erie (Eriehronon) by French sources. Ragueneau, writing in 1648, stated:

> This Lake, called Erié, was formerly inhabited on its Southern shores by certain tribes whom we call the Nation of the Cat; they have been compelled to retire far inland to escape their enemies, who are farther to the West. [Thwaites ed., 1896–1901, vol. 33, p. 63.]


A MAP OF THE WHOLE TERRITORY TRAVERSED BY IOHN LEDERER IN HIS THREE MARCHES.
1. the first March
2. the second March to Mahock
3. the place where the English left him, and his March alone to Ushery
4. His March home againe.
5. The third March.
6. a quick sand at the head of Rapahanock river
7. The Lake of Ushery
8. A great Marish
W
E
S
The Messamomecks dwelt heretofore beyond these Mountaines
Mons Guliel. Gubern.
Mons Car. Reg.
The Rickohockans
Ushery
Wisacky
Sara
Watary
Shakor
Oenock
Akenatzy
Sapon
Nahissan
Mahock
Deserta arenosa
Tosera
Katteras
Kauwitzi
Monakin
Pamunkey
Rapahanock
Toxcopotama
Roanock
Virginia
Carolina
Pars
Leagues
Cross Sculpsit
33
34
35
36
37
38

Map 7.—Facsimile of John Lederer's map of 1672.

The Sanson map of 1656 pictures the "Eriechronons ou N. du Chat" south of Lake Erie and west of Virginia and Maryland, although the cartographic distortion is such that this latter fact may not be significant. A detailed discussion of the problems involved in attempting to draw conclusions concerning the position of the Erie by inspection of early cartographical representations has been given by Marion E. White (1961, pp. 40–49), who calls attention to a very important clue. The so-called Bernou map of c. 1680 shows a legend below Lake Erie (here called "Lac Teiocha-rontiong") reading,

> This Lake is not Lake Erie, as people usually call it. Erie is a part of Chesapeake Bay in Virginia, where the Eries have always lived.

## 5. BLACK MINQUA-ERIE CONNECTION

As with the Massawomeck, there exists no indisputable evidence to link the Black Minqua to the Erie. There does exist, however, a considerable amount of elusive and circumstantial data which, when considered in toto, does seem to render such a conclusion at least plausible.

First of all, it is apparent that just as the Massawomeck of the Smith and Lederer maps seem to fall within Erie territory, so do the Black Minqua of Herrman's map. Second, there seems to be some relation between the name Erie or Eriehronon and the name Arrigahaga as used by Printz. In this connection it should be noted that Lewis Evans used the form Erigas on his map of 1755 (Evans, 1939, p. 13).

Above and beyond this there seem to be numerous parallels between the history of the Erie and the Black Minqua which, when taken together, seem to be more than mere coincidence. This best can be seen in a comparison of the Erie and Black Minqua histories insofar as we can reconstruct them from the sources.

According to the French, the Erie–Iroquois war began shortly after the Iroquois defeat of the northern Algonquian, the Huron, the Tionontati, and the Neutral; that is, between 1651 and 1653. The Iroquois account of the cause for this war, as given to the French at Onondaga, was that

> The Cat Nation had sent thirty Ambassadors to Sonnontouan, to confirm the peace between them; but it happened, by some unexpected accident, that a Sonnontouahronnon [Seneca] was killed by a man of the Cat Nation. This murder so incensed the Sonnontouahronnons, that they put to death the Ambassadors in their hands, except five who escaped. Hence, war was kindled between these two Nations, and each strove to capture and burn more prisoners than its opponent. [De Quens, 1657; *in* Thwaites, ed., 1896–1901, vol. 42, p. 177.]

The Onondaga also blamed the Huron for this, claiming that those who took refuge among the Erie "stirred up this war which is filling the Iroquois with alarm" (Thwaites, ed., 1896–1901, vol. 41, p. 83).

Whatever the cause, the war started unauspiciously for the New York Iroquois. In 1653, apparently, the Erie took and burned a frontier town of the Seneca, cut to pieces the rearguard of 80 picked men of a Seneca expedition returning from Lake Huron, and captured and burned a great captain of the Seneca and one of the Onondaga (ibid., vol. 41, p. 81). Curiously, the French accounts of this early phase of the Erie–Iroquois war make no mention of the Susquehannock or Andaste, but Printz wrote in this year, as previously mentioned, that war had broken out between the Arrigahaga and Susquahannoer.

In 1654 the Iroquois secured their rear by concluding a peace treaty with the French, at which time they announced:

> Our young men will wage no more warfare with the French; but, as they are too warlike to abandon that pursuit, you are to understand that we are going to wage a war against the Ehriehronnons (the Cat Nation), and this very summer we shall lead an army thither. The earth is trembling yonder, and here all is quiet. [Le Mercier, 1655; *in* Thwaites, ed., 1896–1901, vol. 41, p. 75.]

While preparations were being made for this invasion, Erie war parties still lurked around the New York towns, even ambushing three men within 1 day's journey of Onondaga (Thwaites, ed., 1896–1901, vol. 41, p. 75).

The Iroquois attack, when it finally was carried out in August of 1654, was massive, involving some 700 (or 1,200) men. After its entry into their country the northern Ehriehronon abandoned their frontier towns and retreated some 5 days before taking refuge in the fortified town of Rique, inhabited by the Riquehronnon (Rigueronnon), who apparently had just experienced an attack by the "Andastogueronnons" or Susquehannock. Here the Erie beat off the initial attacks in heavy fighting. Finally, carrying their canoes before them as shields and then using them as ladders to scale the walls, the Iroquois stormed the fort. The Eries' gunpowder supply becoming exhausted, the defense collapsed, and the defenders were massacred to the number of 2,000 men, plus women and children (ibid., vol. 41, p. 121; vol. 42, pp. 178–179, 187–188, 191, 195; vol. 45, p. 209).

At approximately the same time, that is, in 1654 or 1655, a battle took place between a party of Black Minqua and Englishmen from Virginia in which the latter suffered a defeat of some proportions.

> I also want to mention briefly what happened among the Black Minquas further in the [interior of the] country, with 15 individual Englishmen whom they had taken prisoners; from which one can learn of the horrible cruelty of the Minquas.

It happened that the English of Virginia carried on war against these Minquas. When the English now came to these savages, marching 2 or 3 hundred men strong, with a few [small] field cannon, they pitched their camp a short distance from the dwellings of the above-mentioned savages. But these savages are somewhat cleverer in building, than our own river Indians who live closer to us, using palisades around their dwellings. Therefore the English did not run, precipitously upon them, but first fired a few cannon [balls against their fort]. Then the English did not know a word about it, before the savages had surrounded the English, were in their rear and drove them into flight, killing some of them and brought home with them 15 prisoners, whom they later, after a lapse of a few days, martyred to death wretchedly and unchristianlike. Because some of these prisoners were of noble birth and of some importance and value, the English offered for each one of them a few 100 florins for ransom; but the savages did not care for ransom or a sum of money, but seemed to be more anxious to exact their revenge and satisfy their anger on these poor prisoners. They therefore erected a high platform, placing large piles of bark below it, upon which they poured all kinds of pitch, bear-fat, *et talia*, etc. Through this they wanted to indicate that whatsoever kind of drink the English wanted to pour out for them, that they themselves would now have to imbibe. They also erected a post in the earth for each prisoner, around which they also placed piles of bark and poured fat thereupon, just as has been stated before. Then they took the prisoners out to undergo their punishment. They first brought them up on the high framework, who were bound around their waists with long slender iron chains; then they put fire to the bark, lying below, and later, shoved one prisoner after the other down into the fire, which burnt with terrible violence. When they had been tormented somewhat in this fire, then the savages pulled them out of it.

Then they bound the said prisoners to the above-mentioned poles, put fire also to that bark in which they had to dance, until they were practically half roasted. Nor did they want that any of them should lose his life in the fire, because they wanted to inflict upon them as much suffering as possible; wherefore they pulled the prisoners out again, placing them in front of themselves. Then they brought forth their doctor of medicine, whom they otherwise called the devil-chaser (why he has this name we will learn to know in the next following chapter). He took his knife and cut each one of the prisoners right over the forehead from one ear to the other, then he took the skin and pulled it backward on the neck or the throat, then he cut the tongue out of the mouths of all the prisoners. On one of them he wanted to prove his mastery and cure him again, if there was any one of them who wanted to live, and then that one would escape further punishment, which his other comrades still would have to stand, but there was no one of them who wanted to live. Then the devil-chaser cut all the fingers off the prisoners and threaded them upon a string, which he delivered to their sachem or ruler, who tied them around his neck. When this was done the devil-chaser cut all their toes off, which he also delivered to their sachem. These he tied around his legs at the knees. The sachem carried them on his body until the flesh rotted away, but when the flesh had rotted off and dried away, he scrapes the bones clean and white, when he threads them anew upon a ribbon and carries them afterwards continually on his body, to show his great courage,—the greater skeleton bones these Minqua sachems carry, the braver warriors they are supposed to be. Then they brought forth fifteen bundles of reeds, like reeds here in Sweden, which were saturated in fat. Of these they bound a bundle on the back of each prisoner, turned them towards Virginia, set fire to the bundles, and told them to run home again, where they had come from, and relate to their countrymen, how well they had been treated and entertained among the Black Minquas. They

> also sent good guides with them, whom the boys followed with a great noise, shot at them with their quarrels [blunt arrows] until the one fell here and the other there. Such a miserable departure and end these poor people had, from which we can observe the awful cruelty of the Minquas. These Minquas are of two kinds, Black and White Minquas.

The author of the preceding passage, Peter Lindeström, follows it with another indicating some familiarity with these Indians.

> Besides I further want to relate about the bloodletting of the savages and their wonderful medicines, which I have seen at least a hundred times among these savages.
>
> When the savage undertakes to march a long journey, the first day he has marched, in the evening, when he strikes camp, he makes up a fire, takes a piece of flint as long as a finger which he has prepared and fitted for this purpose, sharp as a razor, with this he cuts himself all over his body into the deepest flesh, on his arms, thighs and legs, the depth of a finger, according to the depth of the flesh, deeper or less, standing then before the fire to shake off the blood, which runs off him, as if one had butchered an ox. When he has allowed as much blood to run off as he thinks proper, then he takes a kind of ointment, which he smears over his body, wherever he has cut himself. Before morning, it is healed over and run together, and blue streaks remain after it just as when one burns oneself with powder, wherefore the savages appear entirely striped and streaky and especially the Minquas. This is now [something about] the blood letting and cutting of the savages, from which one can observe that they are patient and not tinder-skinned. When now the savage has thus removed some blood, he may march and run as fast and as far as he wants to, he will not tire. [Lindeström, 1925, pp. 241–245.]

At almost the same time (1656) the records of the Virginia Assembly report that,

> . . . many western and inland Indians are drawne from the mountaynes, and lately sett downe near the falls of James river, to the number of six or seaven hundred. [Virginia Assembly, 1823 a, p. 402.]

After due consideration the Assembly resolved to remove these foreign Indians from the borders of the colony by peaceful or martial means, charging Col. Edward Hill to carry out the resolution and to enlist the aid of the Pamunkey chief Tottopottomoy. From later sources which describe Tottopottomoy's defeat and death at the hands of these Indians it would appear that they were Siouan and not Iroquoian. However, these two battles—with the Black Minqua and with the Nahyssan and Mahock—almost certainly are not unrelated (see "Richahecrian-Black Minqua Connection").

Decisive as their capture of Rique may have been, it did not end entirely the Erie threat, for in September of 1655 the Onondaga delegation to Quebec, "representing all the upper Iroquois Nations," asked "for French Soldiers, to defend their villages against the inroads of the Cat Nation, with whom they are at open war" (Thwaites, ed., 1896–1901, vol 42, pp. 49, 53). By 1656, however, the tide of war had gone against the Erie to such an extent that some surrendered voluntarily, and the Iroquois again proclaimed their total destruction (ibid., vol. 44, p. 153). The French Jesuit De Lamberville, writing from the Seneca country in 1682, reported that another surrender took place about 1672, in which

> Six hundred men, women, and children of the nation of the chats, near Virginia, surrendered voluntarily, for fear that they might be compelled to do so by force. [De Lamberville, 1682; *in* ibid., vol. 62, p. 71.]

A similar statement, apparently referring to an event which occurred about 1680, was made to the Governor of Maryland in 1681 by an Onondaga and a Cayuga.

> Another Nation, called the Black Mingoes, are joined with the Sinnondowannes, who are the right Senecas; that they were so informed by some New York Indians whom they met as they were coming down. They told them that the Black Mingoes, in the coming to the Sinniquos, were pursed by some Southern Indians, set upon and routed, several of them taken and bound, till the Sinniquos came unto their relief. [Hanna, 1911, p. 16.]

One additional type of evidence which may be cited in support of the proposition that the Erie were one and the same with the Black Minqua is the fact that, while the historical sources indicate that both of these groups were "destroyed" by the Iroquois, the Iroquois themselves claimed only to have destroyed the Erie in this general area at this time. This argument rests, of course, on the assumption that if the Black Minqua had not been identical with the Erie the Iroquois would have made the fact clear. One thing is indisputable: the Iroquois, and particularly the Seneca, were never particularly modest in their claims of martial prowess and triumphs.

### 6. ARRIGAHAGA-ERIE CONNECTION

Evidence for the identity of the Arrigahaga, mentioned by Printz, with the Erie is largely linguistic. The material already considered indicates that the name "Arrigahaga" is used in such a context that its synonymy with the name "Black Minqua" is indicated strongly; the possible identity of the Black Minqua with the Erie has also been discussed. Above and beyond this it can be argued that the term "Arrigahaga" is a cognate of the term "Erie," having an Iroquoian stem meaning "people of" (Hodge, 1907, pt. 1, p. 921).

The evidence for this derives, first of all, from Lewis Evans' use of the form "Eriga" as a variant for "Erie" in the commentary published in connection with his map of 1755. The second line of evidence derives from the known use of the ending "-haga," as well as cognate forms, in known Iroquois tribal names (Hodge, 1907, pt. 1, pp. 224, 924; 1910, pt. 2, pp. 87, 507–508):

Aniakahaka-Caughnawaga name for Mohawk
Kaniengehaga-Mohawk name for Mohawk
Kuyukuhaga-Mohawk, for Cayuga

Kuenyuguhaka-Tuscarora, for Cayuga
Cheroenhaka-Nottaway, for Nottaway
Tshotinondowaga-Seneca, for Seneca
No$^n$towaka-Tuscarora, for Seneca
Ani-Nundawegi-Cherokee, for Seneca

From this evidence it would seem that the original form of the name given by Printz was probably "Erigahaga."

### 7. ARRIGAHAGA-BLACK MINQUA CONNECTION

Direct evidence for the identity of the names Arrigahaga and Black Minqua stems from the occurrence of these names in circumstances indicating their synonymy. This material has already been discussed under "Massawomeck-Black Minqua Connection."

### 8. RICHAHECRIAN-BLACK MINQUA CONNECTION

The identity of the Richahecrian Indians who invaded Virginia in 1655 long has been the subject of controversy and discussion. This group has been associated, on different grounds, with the Erie, Cherokee, Westo, Huchi, and Yuchi. However, few of these studies have been based upon the original documentary sources and several most crucial references have been ignored completely.

The earliest document pertinent to the Richahecrian question consists of an Act passed by the Virginia Assembly on March 10, 1656, and preserved in the Randolph Manuscript (Virginia Assembly [1642–62]) in the Jefferson Collection of the Library of Congress, and published in Hening's "Statutes at Large."

#### Act XV

Whereas information hath bin given that many western and inland Indians are drawne from the mountaynes, and lately sett downe near the falls of James river, to the number of six or seaven hundred, whereby vpon many seuerall considerations being had, it is conceived greate danger might ensue to this collony, *This Assembly therefore do think fitt* to resolve that these new come Indians be in noe sort suffered to seate themselves there, or any place near vs it having cost so much blood to expell and extirpate those perfidious and treacherous Indians which were there formerly, It being so apt a place to invade vs and within those lymitts which in a just warr were formerly conquered by us, and by vs reserved at the last conclusion of peace with the Indians, In persuance whereof therefore and due respect to our own safety, *Be it enacted by this present Grand Assembly*, That the two vpper countyes, vnder the command of Coll. Edward Hill, do presently send forth a party of 100 men at least and that they shall endeavour to remove the said new come Indians without makeing warr if it may be, only in a case of their own defence, alsoe strictly requireing the assistance of all the neighbouring Indians to aid them to that purpose, as being part of the articles of peace concluded with vs, and faileing therein to look duely to the safety of all the English of those parts by fixing of their arms and provideing ammunition, and that they have recourse the Governour and Councill for further direction therein. And the Governour and Councill are desired to send messages to Tottopottomoy and the Chickahomynies

> and other Indians and to treate with them as they in theire wisdoms and discretions shall think fitt [Hening, 1819–1823, vol. 1, pp. 402–403].

An action of this same Assembly passing sentence upon Colonel Hill, for some "weakness" during a "late expedition against the Indians," which is usually interpreted as constituting a sequel to the passage just quoted, was passed down between March and December 1656.

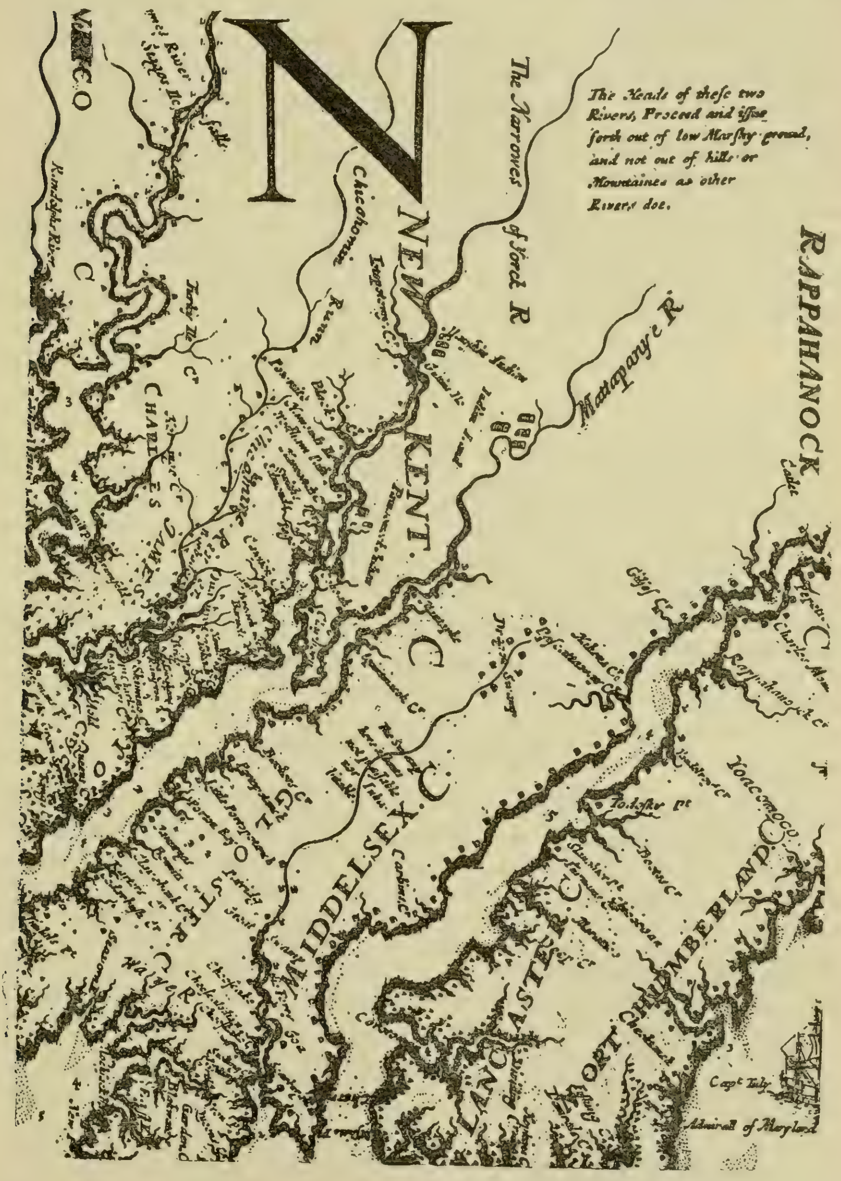
> Debate and consideration of the charge and defence of Coll. Edward Hill by the general and unanimous assent and vote of both houses without any contradiction hath been found guilty of these crimes and weaknesses there alleaged against him and for the vindicating themselves from any imputation of his crimes and deficiencies have ordered that his present suspension from all offices military and civil that he hath had or may have continue & be made uncapable of restitution but by an Assembly, and that he be at the charge of whats alreadie expended in procuring a peace with the Richahecrians and if the Governour or Councel shall find any nearer way to effecting thereof that it shall be acted at the said Coll. Hills proper cost and charge (Bland MS., *in* Hening, 1809–23, vol. 1, pp. 422–423).

In addition we must consider Lindeström's description of an English defeat at the hands of the Black Minqua, and two passages appearing in Lionel Gatford's "Publick Good without Private Interest . . ." (1657).

> The Planters have turned some of the Indians out of their places of abode and subsistence, after that the Indians have submitted to the Colony, and to their government, and have taken up their own lands, after the custom, used by the Colony. As they did otherwise also very unchristianly requite the service which one of the Indian kings did them in fighting against other Indians, that were presumed to be enemies to the English, and to draw towards them, to do them mischief. For that, when the said King desirous to show his fidelity to the English, if not in obedience to some of their commander's orders, did adventure too far with his own Indians, in the pursuit of those other Indians, and thereby lost his life in that action, as some report, though others thought him to be taken alive by the enemies. His wife and children that were by him, at his expiring, recommended to the care of the English . . . were so far from receiving the favour and kind usage, merited by their father, that they were wholly neglected, and exposed to shift for themselves.
>
> And though it be alleged by some, as to the former part of this grievance, that the portion of land which was taken from the said King, before his death, by an English colonel was acknowledged openly in court, yet 'tis generally believed, and by some stoutly asserted, that the said King was affrighted and threatened into that acknowledgement by the said Colonel . . . .
>
> . . . The Planters [of Virginia] did lately, viz. *Anno* 1656, (when a numerous people of the Indians, more remote from the Colonie, came down to treat with the English about setling of a Peace, and withall a liberty of trade with them) most perfidiously and barbarously (after a declaration of their desires and intention) murther five of their Kings, that came in expectation of a better reception) [sic] and bronght [sic] much Beaver with them to begin the intercourse of the commerce. [Gatford, 1657, pp. 6–8.]

From a comment made by Lederer, this Indian chief would seem to be Tottopottomoy and the battle in question apparently took place above the junction of Pamunkey River with Totopotomoy Creek.

> The next day falling into Marish grounds between *Pemaconcock* and the head of the River Matapeneugh, the heaviness of the way obliged me to cross *Pemaeon-*


N
The Heads of these two Rivers, Proceed and issue forth out of low Marshy ground, and not out of hills or Mountaines as other Rivers doe.
The Narrowes of Yorck R
Chicohomini Runn
NEW KENT C
Mattapanye R
RAPPAHANOCK C
CHARLES C
JAMES R
GLOSTER C
MIDDLESEX C
LANCASTER C
NORTHUMBERLAND C
Yoacomoco
Capt Tuly
Admirall of Maryland

Map 8.—Facsimile of detail of Augustine Herrman's map of 1673.

> *cock*, where its North and South branch (called *Ackmick*) joyn in one. In the Peninsula made by these two branches, a great Indian king called Tottopottoma was heretofore slain in battle, fighting for the Christians against the Mahocks and Nahyssans, from whence it retains his name to this day. [Lederer, 1958, p. 10.]

Lederer depicts the site of this battle on his map of 1672 with the legend "Tottopotoma" at the fork in question. Since this name appears in a similar location on the Augustine Herrman map of 1673 (map 8) it would seem that it was generally believed by the contemporary Virginians that Tottopotomoy met his death here.

From a reference appearing in the Maryland Archives for 1661 it would appear that the Nahyssans mentioned by Lederer were still in northern Virginia at this time. This reference derives from the consideration given by the General Assembly of Maryland, sitting at St. John's in St. Marys County, to a petition by the Susquehannock Indians for assistance and aid.

> Tuesday the 23th April
>
> . . . .
>
> At a Grand Comittee of both howses
>
> It is ordered M.r Edward Lloyd and M.r John Bateman Coll. W.m Evans M.r Thomas Manning M.r John Brewer and M.r George Vtye doe drawe up an Acte impowring the Governor and Councell in the Intervall Betweene this Assembly and the next to rayse what forces they in their discrecon shall finde necessary for the Assistance of the Sasquehannough Indians ag.t the Cynaco or Naijssone Indians that have lately killed some English in Patapsco River [which runs into Baltimore Bay] that they doe rayse by equall Assessment vpon the Freemen of this Province and the Charge of the warre and that the said Comittee doe agree and ascertayne the wages and pay of the Souldiery in the Acte and that they doe meete by two of the Clock in the Afternoone to drawe up the Acte
>
> . . . .
>
> Thursday the second of May
>
> . . . .
>
> An acte Impowring the Governor and Councell to Rayse forces and maytayne a Warre without the Province and to ayde the Sasquehannough Indians
>
> Whereas it doth appeare to this p$^{r}$sent Generall Assembly that this Province is in Eminent danger by a warre begun in itt by some forreigne Indians as it hath been made appeare by credible informacon given of a person lately killd and of others that are probably cutt off by these forreign Indians And that in humane probabillity our neighbour Indians the Sasquehannoughs are a Bullwarke and Security of the Northerne parts of this Province And that by former treatyes with that nacon they have very much assured vs of their affeccons and friendship And that they expected the like from vs, And by their treatyes it was agreed Assistance should be granted to each oth[er] in tyme of danger And vpon their severall late Applicacons to vs to that purpose Ayde hath been promis[ed] them accordingly.
>
> It is Enacted and be it enacted [by] the Lord Proprietary of this Province by and with the advice and consent of the vpper and lower how[se] of this p$^{r}$sent General [Assembly] that the Governor with the advice and consent of the Councell

have power to leauy and rayse by presse or otherwise fifty able men with Armes and Provision and all things necessary for them to be sent to the Sasquehannough Forte for the end aforesaid And the proporcon of the said Souldiers to be raysed out of the severall Countyes as followeth. (vizt) out of the County of S$^{t}$. Marys Eleaven, out of Calvert County fifteene out of Charles County seaven, out of Anne Arrundell eleaven out of Kent three, with one Interpreter a Captaine and a Chirurgeon. And for the pay of the officers and Souldiers aforesaid to be proporconed as followeth vntill the Souldiers retourne To the Comander in cheife Six hundred pounds of tobacco in Caske p moneth To the Interpreter six hundred p moneth to the Leiuetennant four hundred p moneth To the Serjeant three hundred p moneth and to the Chirurgeon foure hundred p moneth and to every private Souldier two hundred and fifty p moneth. And be it further enacted by the authority aforesaid that for the defraying of the Charge of the said warre and all charges incident to itt That the Governor and Councell are hereby impowred to leauy by waye of Assessment p pole according to the vsuall Custome out of this Province And in the Intervall of Assemblyes to rayse what forces they in their disrecon shall thinke necessary against the Cynacs or Nayssone Indians or any other Indians that shall be found to have killed any of the Inhabitants of this Province or that have or shall disturbe the peace thereof. And the Charges to be defrayed as aforsaid This Acte to continue and be in force for two yeares or the next Generall Assembly which shall first happen

The Lower howse
haue Assented
Will Bretton Clk

The Vpper howse
haue Assented
John Gittings Clre:

(General Assembly of Maryland,
Upper House, 1883).

The passage "Cynaco or Naijsonne Indians" in one instance, and that of "Cynacs or Nayssone Indians or any other Indians" in another, can be interpreted to mean either that the name "Cynaco" was a synonym for the name "Naijssone" or "Nayssone," or that the Maryland officials and the Susquehannock were uncertain which of two groups of Indians may have been involved in the incident at Patapsco River. However, the term "Cynaco" or "Cynacs" has numerous cognates including "Cinnigos," "Cynikers," "Sannagers," "Senacaes," "Senequas," "Seneques," "Senneks," "Sinacks," "Sinica," "Sinnagers," "Syneck," and "Synicks" (Hodge, 1910, pt. 2, pp. 507–508), all of which are variants of a general Dutch and English term for Iroquoian-speaking peoples (and thereby similar to the Swedish term "Minqua"). According to Hewitt, the term "Seneca" became "the tribal name of the Seneca by a process of elimination which excluded from the group and from the connotation of the general name the nearer tribes as each with its own proper native name became known to the Europeans" (Hodge, 1910, pt. 2, p. 504).

It easily can be demonstrated, however, that the Nahyssan were a Siouan-speaking group, and that they are therefore separate and distinct from a "Cynaco" group. Lederer, in his discourse on his second expedition of 1670, states:

> From the fifth, which was *Sunday*, until the ninth of *June*, I travelled through difficult ways, without seeing any Town or *Indian*; and then I arrived at *Sapon*, a Village of the Nahyssans, about an hundred miles distant from *Mahock*, scituate upon a branch of *Shawan*, alias *Rorenock*-River; and though I had just cause to fear these Indians, because they had been in continual Hostility with the *Christians* for ten years before; yet presuming that the Truck which I carried with me would procure my welcome, I adventured to put my self into their power, . . . . [Lederer, 1958, pp. 22–23.]

In a separate passage Lederer associates these "Saponi" or "Nahyssan" with a number of other tribes or groups.

> These parts [the Piedmont of Virginia] were formerly possessed by the *Tacci* alias *Dogi*; but they are extinct; and the Indians now seated here, are distinguished into the several Nations of *Mahoc, Nuntaneuck,* alias *Nuntaly, Nahyssan, Sapon, Monagog, Mongoack, Akenatzy,* and *Monakin,* & c. One language is common to them all, though they differ in Dialects. [Lederer, 1958, p. 10.]

At a considerably later date, Alexander Spotswood (1882–85, vol. 2, p. 88), Governor of the Virginia Colony, stated:

> . . . I engaged the Saponie, Oconeechee, Stuckanox and Tottero Indians, (being a people speaking much the same language, and therefore confederated together tho' still preserving their different Rules).

At a still later date William Byrd, while helping survey the dividing line between Virginia and North Carolina, recorded a number of Saponi names for creeks emptying into the middle Roanoke, as follows: *Moni-seep* or Shallow Water; *Massamoni* or Paint-Creek; *Ohimpa-moni, Ohimpamony,* or Jumping [Fish?] or Fishing Creek; *Yaypatsco, Yapatoco,* or Beaver Creek; *Tewahominy, Tewaw-hommini, Tewakominy,* or Tuskarooda Creek; *Hicootomony,* or Turkey Buzzard River; *Wicco-quoi* or Rock Creek. An analysis of these names (see table 1) clearly indicates their Siouan nature. In addition, Tutelo has been firmly established, through more recent evidence, as being Siouan (Byrd, 1929, pp. 158, 164–166, 168; Sturtevant, 1958).

From this analysis it would seem that the Maryland General Assembly of 1661 was apprehensive of attack by either a Siouan or an Iroquoian group. It also is obvious that the battle in which Tottopottomoy met his death was separate and distinct from that in which the English of Virginia met defeat at the hands of the Black Minqua. The question thus arises as to whether all the statements which generally have been taken to refer to the "Richahecrian" or "Nahyssan" and "Mahock" defeat of the English refer to two separate battles or to one.

TABLE 1.—*Comparative analysis of Byrd's Saponi place names* [1]

| English | Byrd's Saponi | Tutelo | Dakota | Hidatsa |
|---|---|---|---|---|
| Shallow | seep | | | |
| Water | moni- | manī | mini | mini<br>midi |
| Creek | -moni | | | |
| River | -------------- | taksīta | wakpa<br>watpa | azi |
| Jump | ohimpa<br>? | | | |
| Fish | -------------- | wihoi,<br>bisōká | hoghañ | mua |
| Beaver | Yayp<br>Yapa | Yaop | tcapa | mirapa |
| Turkey Buzzard | Hicooto- | | | |
| Pigeon | -------------- | mayutkāi<br>wayotkāi | wakiyedañ | |
| Paint | massa- | | | |
| Rock | wicco(?) | | | |

[1] Hale (1884), Frachtenburg (1913), Byrd (1929, pp. 164–169).

The statements which actually exist are as follows:

*Statement A.*—A group of "western and inland Indians," 600 or 700 strong, is reported in the spring of 1656 to have moved from the mountains and established itself at the falls of the James. Colonel Hill is sent to persuade its members to remove, or to force them to do this. Tottopottomoy and other Indians are asked to give aid. These "western and inland Indians" are not named.

*Statement B.*—An act passed by the Virginia Assembly and recorded at the close of its session in December 1656 cashiers Colonel Hill for his "crimes and weaknesses." He also is ordered to bear the cost of securing a peace with the Richahecrians.

*Statement C.*—During this same session the Virginia Assembly considered a number of petitions for "compensation for losses suffered during the late expedition" against the Indians (Virginia Assembly (1656)). These petitions were not referred to by later historians. Mention is also made of the former careless killing of Indians.

*Statement D.*—According to Gatford, writing in 1657, the Virginia colonists murdered five Indian ambassadors who had "come down to treat with the English about setling of a Peace, and withall a liberty of trade with them" in 1656. Beaver is mentioned.

*Statement E.*—Gatford also states that an Indian King, name not given, had advanced too rashly in the pursuit of "other Indians" and was either killed or captured.

*Statement F.*—Lederer, writing in 1672, stated that the Indian King Tottopottomoy was killed in a battle with the Mahocks and Nahyssan on the Pamunkey River. This location is confirmed on the Herrman map.

*Statement G.*—Lindeström, probably citing an incident which occurred before his departure from America in October 1655, describes an English defeat at the hands of the Black Minqua.

*Statement H.*—The Maryland General Assembly and the Susquehannock Indians express concern in 1661 about an Indian group, either Nahyssan or "Cynaco," which is threatening the borders of the colony near present-day Baltimore.

From the evidence given in these eight references it would seem that Statement G (from Lindeström) indisputably refers to an Iroquoian group, while Statement F indisputably refers to a Siouan group. It also seems probable (though not indisputable) that Statements A and E also can be associated with this Siouan group. Since the Indian group in Statement E is distinguished from that in D, this later statement may apply to the Black Minqua of G. We thus have Statements B and C of uncertain attribution, and we have tentatively established that:

(1) The group which established itself at the falls of the James and defeated Tottopotomoy on the Pamunkey was comprised of the Mahock and Nahyssan.

(2) The Black Minqua defeated the English and later suffered the loss of five ambassadors.

From internal evidence—namely, the fact that Lindeström left in October of 1655 (Lindeström, 1925, p. xxiv), as well as the fact that Gatford dates the murder of the ambassadors as occurring in 1656—the order of events would seem to be as indicated in (2) above. This gives us a clue as to why Hill was cashiered. Considering the case in historical perspective, it seems unlikely that Hill would have been prosecuted merely because Tottopottomoy had disobeyed orders and had been cut off, or even if he had been defeated in an open battle with the Black Minqua. (Hill does not seem to have suffered losses in the Tottopottomoy episode, and Indian allies are not mentioned in Lindeström's account.) What might have been sufficient and full reason for a court-martial may have been Hill's conduct when the Indian ambassadors were murdered, which presumably caused a new outbreak of the war. These ambassadors were "Richahecrians" but quite likely they were also Black Minqua. The fact that Hill was not cashiered for weaknesses displayed in connection with the Mahock and Nahyssan is significant. Statement B, and possibly Statement C as well, probably is to be associated with the Black Minqua.

This interpretation of an important episode in Virginia history must be compared with the more usual version which seems to have originated with Burk.

Whilst the assembly were employed in these wise and benevolent projects, information was received that a body of inland or mountain Indians, to the number of six or seven hundred, had seated themselves near the falls of James river, apparently with the intention of forming a regular settlement. Some movements were at this time noticed among the neighboring tribes, which seemed to indicate something like a concert and correspondence with these strangers; and the minds of the colonists always alive to, and apprehensive of, Indian treachery, were unusually agitated on this occasion. The place these Indians had made choice of, was another source of disquiet. It was strong and difficult of access, alike calculated for offensive and defensive operations; and they recollected the immense trouble and expence that had been incurred in extirpating the tribes which formerly dwelt in that place. At the conclusion of the last peace with the Indians, this station was considered so important, that its cession was insisted on, as the main pledge and security of peace; and it had hitherto continued unoccupied as a sort of barrier to the frontiers in that direction. Under all these circumstances, they could not see it, without anxiety, occupied by a powerful band of hardy warriors, who perhaps were only the advance guard of a more formidable and extensive emigration.

The measures of the assembly in removing this ground of alarm were prompt and vigourous.* [fn. printing Virginia Assembly (1642–1662) pp. 111–112]. One hundred men were dispatched under the command of Edward Hill, to dislodge the intruders. His instructions were to use peaceable means only, unless compelled by necessity; and to require the assistance of all the neighboring Indians, according to the articles of the late treaty. The governor was at the same time directed to send an account of this invasion to Totopotomoi, and desire that his influence should be exerted in procuring the immediate co-operation of the friendly tribes.

It is difficult to form any satisfactory conjecture as to the motives of the extraordinary movement directly against the stream and tide of emigration. It was certainly a bold step to descend into the plain, in the face of an enemy, whose power they must have heard of, and which could scarcely fail of inspiring astonishment and awe; and to take the place of warlike tribes, whom the skill and destructive weapons of the whites had lately exterminated and swept away.

The scanty materials which the state records have preserved of Indian affairs, throw little light on this subject. But though they do not present this people in all the various relations of peace and war, we generally see them in one point of view at least; and are often able by induction, to supply a considerable range of incident and reflection. In the second session of assembly colonel Edward Hill was cashiered, and declared incapable of holding any office, civil or military, within the colony, for improper conduct in an expedition against the Richahecrians. We are not told whether the offence of Hill was cowardice, or a willful disobedience of the instructions he had received. There is however reason to believe, that he was defeated, and that the Rechahecrians maintained themselves in their position at the falls by force; for the governor and council were directed by the assembly to make a peace with this people, and they further directed that the monies which were expended for this purpose, should be levied on the proper estate of Hill.* [fn. printing Virginia Assembly, *et al* (1606–92), p. 200].

From other sources almost equally authentic, we learn that the aid demanded of the Indians was granted without hesitation. Topopotomoi marched at the head of an hundred warriors of the tribe of Pamunkey, and fell with the greater

> part of his followers, gallantly fighting in this obstinate and bloody encounter (Burk, 1804–16, vol. 2, pp. 104–107).

Burk's account seems to have constituted the primary source for most later authors writing on this battle, although a few also have employed Gatford or have cited Hening's printing of the Virginia Assembly documents. Lindeström's account of a battle between the English of Virginia and the Black Minqua, as well as the material from the Maryland Archives and part of Lederer's statements, has generally been ignored.

### 9. RICHAHECRIAN-ERIE CONNECTION

The identity of the Richahecrian with the Erie is based, in part, upon De Lamberville's comment that "six hundred men, women, and children of the nation of the chats" once lived "near Virginia," and, in part, upon some degree of similarity in the names. The latter evidence is not completely convincing, but it is still suggestive.

| | |
|---|---|
| Richahe__crian | English (Va. Assembly, 1656) |
| Arrigahaga | Swedish (Printz, 1653) |
| Eriga | English (Evans, 1755) |
| Erieh____ronon | Huron (Thwaites, ed., 1896–1901, vol. 18, p. 235) |
| Erieeh____ronon | Iroquois (ibid., vol. 21, p. 191) |
| Erieh____ronnon | Iroquois (ibid., vol. 41, p. 81) |
| Rigue____ronnon | Iroquois (ibid., vol. 47, p. 59; vol. 50, p. 117) |
| Rhiie____rrhonon | Huron (ibid., vol. 8, p. 115) |

### 10. RICHAHECRIAN-RICKOHOCKAN CONNECTION

In his report on his second expedition of 1670, Lederer stated, in connection with a visit at "Akenatzy":

> . . . I have heard several Indians testifie, that the Nation of the *Rickohockans*, who dwell not far to the Westward of the *Apalataean* Mountains, are seated upon a Land, as they term it, of great Waves; by which I suppose they mean the sea-shore.
>
> The next day after my arrival at *Akenatzy*, a *Rickohockan* Ambassadour, attended by five Indians, whose faces were coloured with *Auripigmentum* ["gold paint"] (in which Mineral these parts do much abound) was received, and that night invited to a Ball of their fashion; but in the height of their mirth and dancing, by a smoke contrived for that purpose, the Room was suddenly darkned, and for what cause I know not, the *Rickohockan* and his Retinue barbarously murthered. [Lederer, 1958, p. 26.]

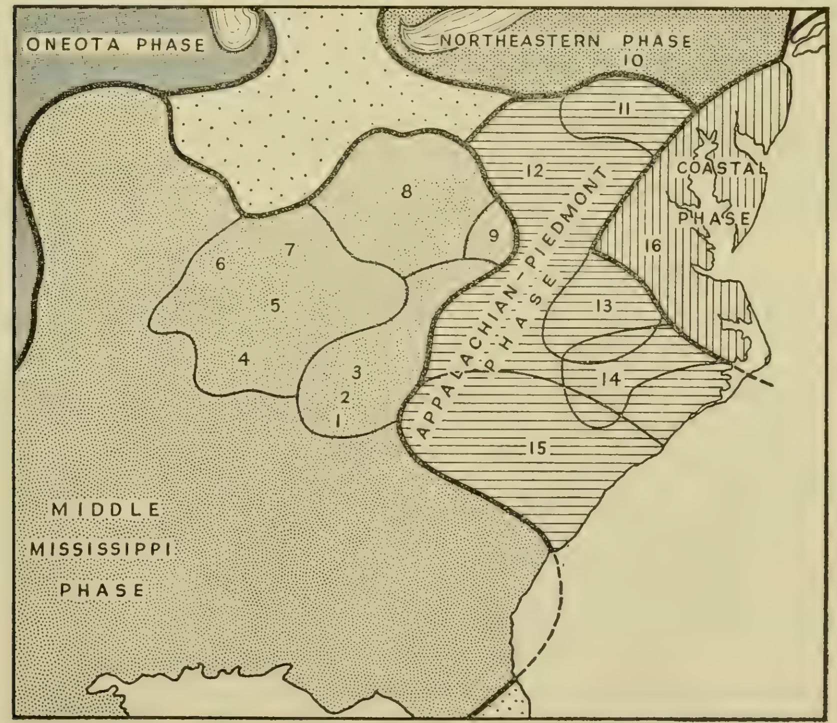
Lederer also shows the "Rickohokans" on his map of 1672 as being west of the present-day site of Roanoke, Va., and apparently west of the Great Valley of Virginia on the New River. This location is also due west of the principal Virginia settlements of 1656 and only a short distance, therefore, from what was then taken as the borders of the colony. The Rickohockans were thus close enough to the Virginia Colony to have been the Richahecrians. The similarity in names is also suggestive.

### 11. RICKOHOCKAN-ERIE CONNECTION

The identity of the Rickohockan with the Erie is suggested by the general similarity of geographical location and by linguistic evidence. The first name easily can be broken down into "ricko-" and "hockan" and compared to the name "rigue" or "rique" in "riquehronnou," the Iroquois name for the Erie of Rique, and to the stem "haga" or "haka" meaning "people of." Thus the name "Rickohokan" possibly can be interpreted as an Iroquois name meaning "People of Rique."

## CONCLUSIONS

From the material which has been considered here it is apparent that Iroquoian tribes played an important part in the early history of Virginia, Maryland, and Pennsylvania, and that a particularly important group in this respect included the Erie, Black Minqua,



Map 9.—Protohistoric and early historic archeological phases of the Eastern United States. Aspects: *1*, Mouse Creek; *2*, Dallas; 3, Large Log; *4*, Duck River; *5*, Cumberland; *6*, Kincaid; *7*, Angel; *8*, Late Fort Ancient; *9*, Clover; *10*, Iroquois; *11*, Shenk Ferry; *12* , Allegheny; *13* ,Clarksville ;*14*, Hillsboro; *15*, Pee Dee; *16*, Potomac Creek.

or Massawomeck, who lived west of the Siouan tribes occupying the Virginia Piedmont. As far as we can determine, these Iroquoian tribes were established on the headwaters of the Potomac and on the upper Ohio drainage area. In light of this probable distribution it is pertinent to ask to what degree this does or does not show correlation to known archeological complexes in the area.

The following protohistoric and early historic archeological units (see map 9) are pertinent in this connection:

- Mississippi Pattern
    - Middle Mississippi Phase
        - Fort Ancient Aspect
            - Madisonville Focus
            - Anderson Focus
            - Baum Focus
            - Feurt Focus
            - Clover Focus
- Woodland Pattern
    - Applachian Phase
        - Shenk's Ferry Aspect
            - Shenk's Ferry Focus
            - Stewart Focus
        - Monongahela Aspect
            - Monongahela Focus
            - Luray Focus
    - Northeastern Phase
        - Iroquois Aspect
            - Madison Focus
            - Genoa Fort Focus
            - Factory Hollow Focus
            - Lawson Focus
            - Ripley Focus
            - Whittlesey Focus
            - Tioga Focus

The distributions of the various aspects are shown on the accompanying series of maps (Griffin, 1943; 1952; MacNeish, 1952 a, pp. 51–54; Mayer-Oakes, 1955; Morgan, 1952, pp. 93–98; Ritchie, 1951; Schmitt, 1952, pp. 62–70; Witthoft, 1951; 1955 (Personal communication)).

The Fort Ancient Aspect, located in the middle Ohio Valley (see map 10), constitutes the most northeastern division of the Mississippi Pattern; a major cultural division centered in the Mississippi drainage and characterized by intensive agriculture, relatively superior pottery of distinctive style, palisaded fortified villages, flat-topped pyramids or cones, and town plazas. Culturally, the Mississippi Pattern stood in roughly the same relative position to the neighboring Woodland Pattern as "river bottom farming culture" stands to "hillbilly culture" in modern America. Although the Fort Ancient peoples were marginal to the spectacular developments of the Mississippi Pattern as it evolved along the Mississippi and Tennessee Rivers, their culture still was unmistakably Mississippian and non-Woodland. Furthermore, it had considerable homogeneity and occupied a large area including "a considerable proportion of southern Ohio, northern Kentucky, southeastern Indiana, and, to an as yet uncertain extent, the Kanawha Valley in West Virginia" (Griffin, 1943, pp. 206, 257–260, 268–269, table xiv; 1952).

Within the Fort Ancient Aspect a number of smaller and even more homogeneous units (foci) may be discerned. These foci (Madisonville, Anderson, Baum, Feurt, Clover) seem to be distinguishable partly upon regional and partly upon temporal grounds. The Madisonville and Clover foci are the latest. Historic trade objects such as copper bells and snakes, copper and brass spirals, pendants and bells, iron adzes and beads, blue glass beads, etc. have been recovered from the Madisonville and Clover components. Commenting upon these remains, Griffin states that

> . . . it does not appear that any Fort Ancient focus had any considerable antiquity, and the probability is that the Madisonville Focus is only 250 to 350 years old. Even if the historic materials had not been buried in undoubted association with typical Madisonville artifacts in the Madisonville Component, this focus, on the basis of comparative analysis, could be shown to have been of no great age. [Griffin, 1943, p. 207.]

Since, however, archeological investigation has failed to reveal any connection between the Fort Ancient Aspect and the later historic Indian cultures which occupied the region, it generally is concluded that the former disappeared before 1700, probably as a result of the documented Iroquois invasion of c. 1680.

> The Fort Ancient Aspect then represents a Middle Mississippi offshoot which merged culturally with a basic Woodland group already tinged with Mississippian traits. This process was interrupted by the pressure of the Iroquois from the northeast, and the southeastern Fort Ancient sites were modified as a result of the pressure of the Europeans on the Indian tribes of the Piedmont and mountain area of West Virginia and Virginia. The Madisonville Focus lasted until the period between 1670 and 1690, when its cultural unity was destroyed by the Iroquois and by the attraction of the Indians in the area to trading centers such as those of the Illinois Valley, The Middle Atlantic Area, and the Southeast. . . . As already stated, it is doubtful that any specific historic tribe or tribes can be associated with the Fort Ancient culture. It is almost certain that it is not Iroquoian, and there is little or no archaeological or historical evidence that it is a Siouan relic. This seems to leave only one linguistic stock of sufficient prominence in the area which cannot be eliminated, namely, the Algonquian. [Griffin, 1943, p. 308.]

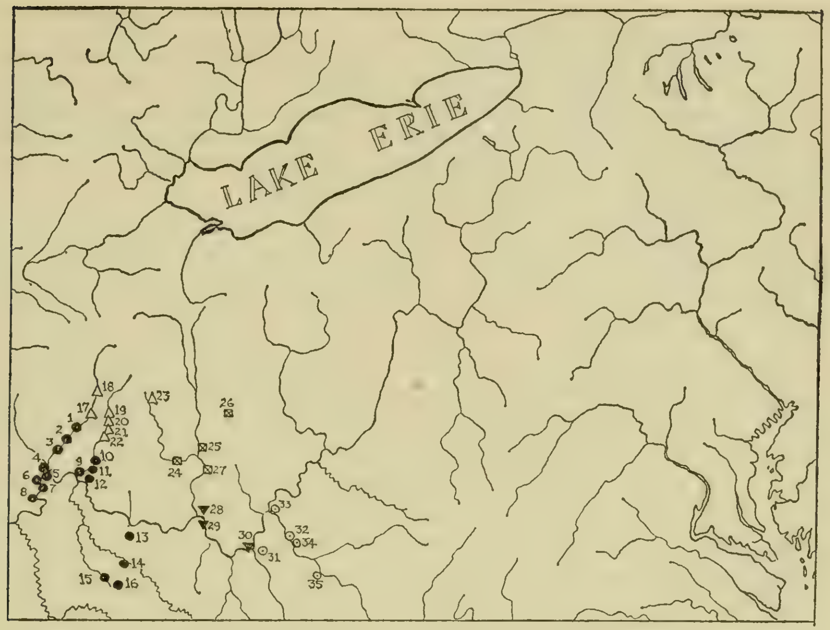
Among the various Algonquian tribes the Shawnee have what may be considered the best claim to having resided in at least part of the Fort Ancient territory during the early historic (Griffin, 1943, pp. 120–121, table xiv; Hanna, 1911, vol. 1, pp. 119–126; Mayer-Oakes, 1955, pp. 170–171; Witthoft and Hunter, 1955).

COMPONENTS OF THE FORT ANCIENT ASPECT, MIDDLE MISSISSIPPI PHASE, MISSISSIPPI PATTERN

| Components | Focus | Reference |
|---|---|---|
| 1. Campbell Island | Madisonville | Griffin, 1943. |
| 2. Steel Plant | do | Do. |
| 3. Hine | do | Do. |
| 4. 12 Dea 18 | do | Do. |
| 5. 12 Dea 19 | do | Do. |
| 6. 12 Dea 29 | do | Do. |
| 7. 12 Oho 18 | do | Do. |
| 8. 12 Oho 14 | do | Do. |
| 9. Madisonville* | do | Do. |
| 10. Turpin | do | Do. |
| 11. Hahn's Field | do | Do. |
| 12. Sand Ridge | do | Do. |
| 13. Fox Farm | do | Do. |
| 14. Clay Mound | do | Do. |
| 15. Larkin | do | Do. |
| 16. Buckner | do | Do. |
| 17. Kemp | Anderson | Do. |
| 18. Steele Dam | do | Do. |
| 19. Taylor | do | Do. |
| 20. Anderson | do | Do. |
| 21. Fort Ancient | do | Do. |
| 22. Mill Grove | do | Do. |
| 23. Stokes | do | Do. |
| 24. Baum | Baum | Do. |
| 25. Gartner | do | Do. |
| 26. Baldwin | do | Do. |
| 27. Higby | do | Do. |
| 28. Feurt | Feurt | Do. |
| 29. Fullerton Field | do | Do. |
| 30. Proctorville | do | Do. |
| 31. Clover* | Clover | Griffin, 1943; Mayer-Oakes, 1955. |
| 32. Buffalo (Wells) | do | Do. |
| 33. Orchard (Parsons) | do | Mairs, 1950; Mayer-Oakes, 1955. |
| 34. Clifton | do | Griffin, 1943. |
| 35. Brownstown | do | Do. |

*Denotes sites containing historic materials.

East of the Fort Ancient Aspect, on the headwaters of the Ohio, Potomac, and western Susquehanna Rivers, lie two closely related basically Woodland Aspects displaying numerous influences of Mississippian character, seemingly derived from the Feurt and Clover Foci of the Fort Ancient culture. Such influences became so strong in the later phases of the Monongahela Focus that the latter has sometimes been considered a part of the Mississippi Pattern. Historically, however, the Monongahela roots seem to be Woodland, the Mississippi traits coming in as foreign elements from the west, and being of particular importance in the westernmost focus—the Monon-



Map 10.—Components of the Fort Ancient Aspect.

gahela. The Mississippian influences are attenuated most in the Shenk's Ferry Aspect, but still give this culture a distinctive cast (Butler, 1939; Evans, 1955; Griffin, 1952; Manson, MacCord, and Griffin, 1944, p. 416; Mayer-Oakes, 1955, pp. 98–112, 155–162, 220–224; Witthoft, 1954; 1955; Witthoft and Farver, 1952).

The Monongahela Aspect is distributed over a large territory which includes eastern Ohio, northern West Virginia, and the western parts of Pennsylvania, Maryland, and Virginia. The Monongahela Focus is largely west of the Appalachian Divide and the Luray Focus entirely east of the Divide (see map 11). Both foci are characterized by distinctive pottery vessels and pipe types, by certain kinds of beads, pendants, and projectile points, and the occurrence of heavily fortified hilltop villages displaying round stockades and houses, and central plazas. From his study of the Monongahela Focus Mayer-Oakes concluded that

> The abundance and relative richness of Monongahela sites imply that these peoples were probably the most numerous single group of Indians ever to live in the Upper Ohio Valley. The general excellence of pottery and other artifacts, control over environment and creation of leisure time indicate that the Monongahela villagers had reached a high level of adjustment to their natural surroundings. . . . Warfare and military activities were an important aspect of life in Monongahela times. The very structure of the village indicates that ideas of protection were prevalent. Also many village situations, on hilltops and other

> commanding positions, obviously served defensive purposes. . . . While these people settled primarily in the area drained by the lower and middle Monongahela River, some settlements are known from the Ohio Valley proper and outlying villages occur in the Shenango and upper Allegheny valleys. Some of the Whittlesey focus sites are characterized by minor amounts of Monongahela pottery. "Monongahela Cordmarked [pottery]" is also found on sites in the Shenandoah and Potomac valleys, most often as trade material but perhaps as components in several instances. [Mayer-Oakes, 1955, pp. 12, 222.]

This statement possibly might apply to the Luray Focus also, which unfortunately is still relatively unknown (Manson, MacCord, and Griffin, 1944, pp. 400–401; Mayer-Oakes, 1955, pp. 158–162; Schmitt, 1952, pp. 62–64).

As is the case with the Fort Ancient culture, numerous clues indicate Monongahela contacts with neighboring groups. Iroquois trade pottery frequently has been found in Monongahela sites; conversely, Monongahela pottery is known from Whittlesey sites, and from historic sites on the lower Susquehanna and Potomac which have been dated at c. 1600. European trade goods also have been found in Monongahela components which, curiously enough, are concentrated in the middle Monongahela drainage near the headwaters of the Potomac. Historic trade goods are never abundant, however, partly because the Monongahela people do not seem to have practiced the custom of burying grave goods with their dead, and partly because the Monongahela culture and peoples disappeared before European penetration became intensive. The territory of the Monongahela Aspect seems to have remained essentially unoccupied until about 1700, at which time Indian groups from the east began a movement into it. A number of students have identified the Iroquois as the cause of the Monongahela disappearance (Mayer-Oakes, 1955, pp. 9–12, 228; Schmitt, 1952, pp. 67–69).

Somewhat more data is available concerning the fate of the Shenk's Ferry Aspect. Characterized by "widely scattered tiny hamlets," and by distinctive pottery types, the two foci of the Shenk's Ferry Aspect occupied the eastern side of the Susquehanna drainage between Harrisburg and the Pennsylvania-Maryland State line, the middle course of the Susquehanna between Harrisburg and Wilkes-Barre, and the west branch of the Susquehanna to Renova, and were overrun some time between 1560 and 1590 by the Tioga Focus from the Upper Susquehanna. This process seems to have involved, among other things, an absorption of Shenk's Ferry peoples into the Tioga culture. The reasons for this conclusion have been presented by Witthoft:

> We have several reasons for believing that the Shenk's Ferry people survived into the Historic period. The best evidence comes from the Shultz Site of Washingtonboro, the earliest Susquehannock [Tioga] site on the lower Susquehanna.

> . . . On this site the whole Shenk's Ferry complex, including the pottery types described here, along with a majority of another type of Shenk's Ferry pottery partially acculturated to Susquehannock style, is intermixed with early colonial Susquehannock materials in a large number of the pits and graves, and apparently represents the product of a large number of captives. At the next Susquehannock Site, the Washingtonboro Site, a very few such Shenk's Ferry sherds have been excavated from Susquehannock middens of the mid-seventeenth century [now redated to 1600–1620]. [Witthoft and Farver, 1952, p. 5.]

Thus, the Shenk's Ferry history, like that of the Monongahela and Fort Ancient Aspect, affords ample proof of the nonstatic nature of Indian interrelations in the Early Historic (Witthoft, 1951, p. 318; 1954, pp. 26–27; 1955).

The remaining archeological complex represented within the northwestern Pennsylvania and Ohio area is the so-called Iroquois Aspect; a distinctive cultural unit seemingly indigenous to the interior low plateau and central lowland provinces flanking the northernmost ranges and plateaus of the Appalachian system, expanding into the Allegheny sector of the Appalachian Plateau and into the ridge and valley provinces of Pennsylvania only during the historic period.

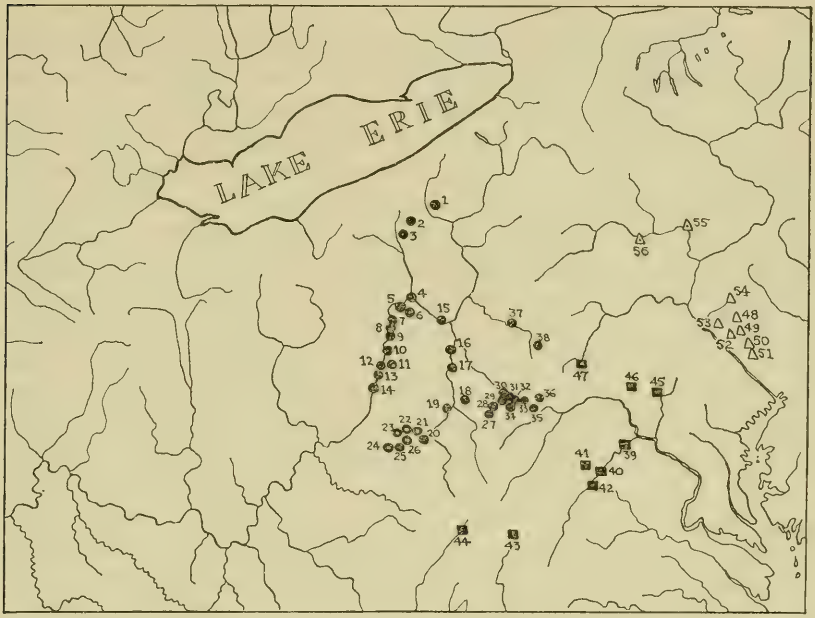
The westernmost focus of the Iroquois Aspect was the Whittlesey, the fortified towns of which extended along the Ohio shore of Lake Erie, along the Maumee River into Indiana (e.g. ,the Secrest-Reasoner component of Blackford County, Ind., not shown on the accompanying map), and possibly into southeastern Michigan. While its cultural affiliations largely point east to the Ripley Focus and to the Iroquois Aspect generally, the focus also shows strong influences from the Monongahela Aspect and from the Mississippian cultures, particularly Fort Ancient. Like these other archeological complexes, the Whittlesey Focus disappeared during the Early Historic—only one component, Fairport, yielding any European trade goods. As a result of this early demise, few suggestions exist as to the identity of the culture's bearers. Most archeologists have avoided the question altogether; others, lacking any other candidates, have brought forth the Erie (Black, 1935; Griffin, 1944, p. 368; Mayer-Oakes, 1955, p. 222; Morgan, 1952, pp. 96–97).

The Ripley Focus, with components lying along the southern shore of Lake Erie between Buffalo and the Ohio border, is closely related to the Lawson and Factory Hollow Foci farther to the east, and less so to the Whittlesey. The major sites, Ripley and 28th Street, are large, rich villages yielding European trade goods of an early date. No later sites have been found, leading to the general conclusion that this culture also disappeared before or about 1650. The Ripley Focus often has been identified as the remains of the Erie tribe (or nation), but its major characteristics, a small number of large villages situated very close to Lake Erie, are such that this identification may

COMPONENTS OF THE MONONGAHELA AND SHENK'S FERRY ASPECTS, APPALACHIAN PHASE, WOODLAND PATTERN

| Components | Focus | Reference |
|---|---|---|
| 1. McFate | Monongahela | Mayer-Oakes, 1955. |
| 2. 36 Me 17 | do | Do. |
| 3. 36 Me 8 | do | Do. |
| 4. 36 Bv 9 | do | Do. |
| 5. Shippingport | do | Do. |
| 6. Scarem | do | Do. |
| 7. Watson | do | Do. |
| 8. 46 Hk 2 | do | Do. |
| 9. 46 Hk 6 | do | Do. |
| 10. 46 Br 2 | do | Do. |
| 11. 46 Oh 9 | do | Do. |
| 12. 46 Oh 5–7 | do | Do. |
| 13. 46 Oh 1 | do | Do. |
| 14. 46 Mr 5–7 | do | Do. |
| 15. McKee Rock Mound | do | Do. |
| 16. Buncla | do | Do. |
| 17. Newell | do | Do. |
| 18. Phillips | do | Do. |
| 19. Speers | do | Do. |
| 20. Buckner | do | Do. |
| 21. Buckner* | do | Do. |
| 22. White* | do | Do. |
| 23. 36 Gr 1* | do | Do. |
| 24. Eisiminger* | do | Do. |
| 25. Gordon | do | Do. |
| 26. Ingraham* | do | Do. |
| 27. Martin | do | Do. |
| 28. Montague* | do | Butler, 1939. |
| 29. Clouse | do | Do. |
| 30. Reckner | do | Mayer-Oakes, 1955. |
| 31. Hanna | do | Butler, 1939. |
| 32. Gower | do | Mayer-Oakes, 1955. |
| 33. Peck | do | Do. |
| 34. Fort Hill | do | Do. |
| 35. Troutman | do | Do. |
| 36. Emerick | do | Do. |
| 37. Johnston | do | Do. |
| 38. Powell | do | Do. |
| 39. Berryville | Luray | Evans, 1955. |
| 40. Keyser Farm | do | Do. |
| 41. Buracker | do | Do. |
| 42. Luray | do | Do. |
| 43. Buffalo Gap | do | Do. |
| 44. Clovercreek | do | Do. |
| 45. Waynesville sites | do | Witthoft, 1955. |
| 46. Welsh Run | do | Do. |
| 47. Everett | do | Do. |
| 48. Summy | Shenk's Ferry | Witthoft and Farver, 1952. |
| 49. Miller* | do | Do. |
| 50. Shenk | do | Do. |
| 51. Brenneman | do | Do. |
| 52. Peter Rice | do | Do. |
| 53. Swatara (Erb) | do | Do. |
| 54. Indiantown Gap* | do | Do. |
| 55. Muncy Creek* | Stewart | Witthoft, 1954. |
| 56. Stewart | do | Do. |

*Denotes sites containing historic material.



Map 11.—Components of the Monongahela (black) and Shenk's Ferry (white) Aspects, Appalachian Phase, Woodland Pattern.

not survive critical reading of the historical sources. Witthoft (1951, p. 320) has expressed some doubts on this point (Carpenter, Pfirman, and Schoff, 1949, p. 6; MacNeish, 1952 a, p. 6; 1952 b, pp. 22–24; Parker, 1907; 1922, pp. 271–276).

North and east of the Ripley Focus we find the Lawson and Factory Hollow Foci. The former includes several sites in the Buffalo area east of Niagara, and others in southern Ontario. Only the Buffum Street site has yielded historic trade goods, yet the entire focus is attributed, with some justification, to the Neutrals, who are known from historical sources to have resided in this same area, to have suffered several defeats at the hands of the New York Iroquois between 1648 and 1651, and to have abandoned their country shortly thereafter (Kidd, 1952, pp. 74–75; MacNeish, 1952 a, p. 54; 1952 b, pp. 10-11; Witthoft, 1951, pp. 319–320).

The Factory Hollow Focus represents the remains of the early historic Seneca. Not only are most of the sites historic but several have been identified with reasonable certainty with historically known villages. These include Rochester Junction (Totiakton, also known as Sonnontuan), Kirkwood (Gannounata), Boughton Hill (Ganagaro), and Beal (Gandougarae), all of which were destroyed by Denonville in 1687. The "direct historical method" is applicable here. Research in this direction by Wray and Schoff (1953) has defined those archeological traits (imported and native) distinctive of Seneca culture at various times during the Early Historic, has elucidated the changes brought about in Seneca culture by European influences, and has indicated the sequence in which the various villages were occupied between 1550 and 1687. The archeological materials also emphasize the restricted distribution of these early historic villages which lie largely within a narrow ecological zone formed by the merger of the interior low plateau with the lowland bordering Lake Ontario, bounded on the east by Lake Canandaigua and on the west by the Genesee. The archeological evidence on hand at present does not indicate any extensive Seneca movement away from this area, other "Seneca" sites being known only from the Genesee and the Upper Allegheny (mostly undescribed and unpublished), and possibly on the Susquehanna. All these are historic, however, and some are historically documented Late Colonial (Houghton, 1912, pp. 363–410; MacNeish, 1952 a, pp. 53–54; 1952 b, pp. 38–39; Mayer, 1943; Mayer-Oakes, 1955, p. 72; Parker, 1919; Ritchie, 1954; Steward, 1954; Witthoft, 1951, pp. 318–319; 1955; Wray, 1954; 1955; Wray and Schoff, 1953).

The remaining foci of the Iroquois Aspect to be found in New York are not directly pertinent to the purposes of this study, and only a few comments need to be made. The Madison Focus furnishes us with a warning against the uncritical correlation of archeological foci with tribes, components showing striking similarities having been correlated with historical villages assigned to the Onondaga, Oneida, and St. Lawrence Iroquois (Kwedech) tribes. This fact is also of interest in light of the known linguistic affiliations and warns us against making any rash assumptions concerning the carriers of archeological cultures (MacNeish, 1952 a, pp. 52–53; 1952 b, pp. 56–57, 66, 84; Witthoft, 1951, pp. 316–317).

As has been intimated already, the Tioga Focus originally seems to have occupied the Upper Susquehanna drainage and to have migrated from there to the Lower Susquehanna, blotting out the Shenk's Ferry culture in the process. This conclusion is based upon studies of the datable European trade goods found in the sites and upon cross-correlation with well-known Seneca sites, and may be considered as fairly well established. The Upper Susquehanna sites, such as Homets Ferry, South Towanda (Sick), and Cass, are equivalent to the earliest historical Seneca sites, and are datable at c. 1550. The Quiggle site on the west branch of the Susquehanna is slightly later, and apparently represents the initial Tioga thrust into the lower valley. After this time both the north and west branches seem to have been abandoned, the archeological materials indicating a gap until the arrival of Delaware immigrants around 1720. The large Schultz and Brandt sites, already mentioned in connection with the Shenk's Ferry remnants or "captives," represent the final Tioga migration downstream and are dated from 1560 to 1590. These are followed by the Herriot site at Romney, W. Va., and by the large Washingtonboro site which dated from 1600 to 1620 and therefore was in existence at the time of John Smith's visit to the area in 1608. Later Tioga sites have not been reported yet (Witthoft, 1955).

The contemporaneity of the Tioga Washingtonboro site and John Smith's visit permits a reasonable (although circumstantial) identification of the bearers of this culture. In his accounts and map Smith places a tribe named the "Sasquesahanocks" (a "mightie people") upon the Susquehanna River below the mountains and indicates several of their towns, one of which might be the Washingtonboro site. From other sources these "Sasquesahanocks" can be correlated with all or part of the Iroquois-speaking group known to the New York Iroquois, Huron, and French, as the Andasternonnon or Andaste (whence the usual name for the archeological unit). During the 17th century these people engaged in a long bitter war with the New York Iroquois, and eventually were conquered around 1674. It is interesting to note that while the Andaste language is related closely to Mohawk, the material culture as revealed by archeology is similar to that of the Factory Hollow, Lawson, and Ripley Foci (Cadzow, 1936, pp. 9–38; Hanna, 1911, vol. 1, pp. 26–87; Skinner, 1921, pp. 57–67; Witthoft, 1955).

The historical evidence relative to the location of the Erie-Black Minqua-Massawomeck is scanty and circumstantial, but still sufficient for us to correlate this tribal confederation with an archeological complex. From the material on hand it is evident that the Black Minqua were west of the Susquehanna drainage area which, in 1670, was occupied by the Susquehannock (see maps 6 and 8). The statements made by John Smith and others make it clear that the Monacan and Manahoac occupied the Virginia Piedmont, and that the Massawomeck were to the west in the mountains. The French sources also are consistent in placing the Erie in the upper Ohio River area. Three statements are particularly important in this respect. The first, dating from 1661 or 1662, derives from Lallemant.

> Proceeding rather Westerly than Southerly, another band of Iroquois is going four hundred leagues from here [the Iroquois country] in pursuit of a Nation whose only offense consists in its not being Iroquois. It is called Ont°agannha, signifying "the place where people cannot speak"—because of the corrupt Algonquin in use there.
>
> Their villages are situated along a beautiful river which serves to carry the people down the great Lake (for so they call the Sea). . . . [Thwaites, ed., 1896–1901, vol. 47, pp. 145–147.]

COMPONENTS OF THE IROQUOIS ASPECT, NORTHEASTERN PHASE, WOODLAND PATTERN

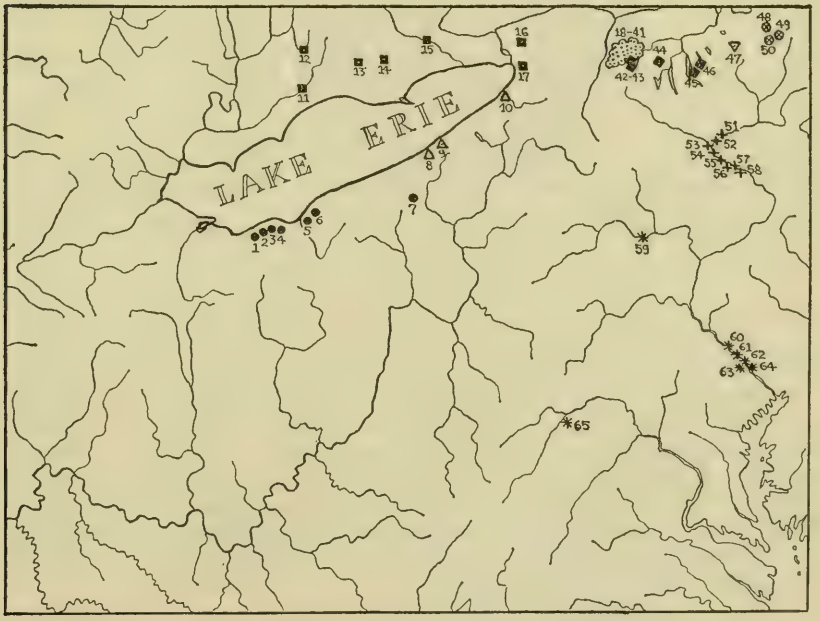
| Components | Focus | Reference |
|---|---|---|
| 1. National Tube Co | Whittlesey | Greenman, 1935 b; 1937. |
| 2. Burrill | do | Greenman, 1935 b. |
| 3. Tuttle Hill | do | Greenman, 1937. |
| 4. South Park | do | Do. |
| 5. Fairport* | do | Morgan and Ellis, 1943. |
| 6. Reeve | do | Greenman, 1935 a. |
| 7. Boice Fort | do | Greenman, 1935 b. |
| 8. 28th Street* | Ripley | Carpenter, Pfirman, and Schoff, 1949. |
| 9. Ripley* | do | Parker, 1907. |
| 10. Goodyear | do | MacNeish, 1952 a, b. |
| 11. Southwold | Lawson | Do. |
| 12. Lawson | do | Wintemberg, 1939. |
| 13. Pound | do | MacNeish, 1952 b. |
| 14. Uren | do | Wintemberg, 1928. |
| 15. Middleport | do | Wintemberg, 1948. |
| 16. Kienuka | do | MacNeish, 1952 a, b; Witthoft, 1951. |
| 17. Buffum Street* | do | MacNeish, 1952 b. |
| 18. Boseley Mills* | Factory Hollow | Houghton, 1912; Wray and Schoff, 1953. |
| 19. Feugle* | do | Wray and Schoff, 1953. |
| 20. Dutch Hollow* | do | Houghton, 1912; Wray and Schoff, 1953. |
| 21. Kirkwood* | do | Do. |
| 22. Adams* | do | Do. |
| 23. Cameron* | do | Wray and Schoff, 1953. |
| 24. Tram* | do | Houghton, 1912; Wray and Schoff, 1953. |
| 25. Lima* | do | Do. |
| 26. Power House* | do | Do. |
| 27. Dann* | do | Do. |
| 28. Rochester Junction* | do | Do. |
| 29. Warren* | do | Do. |
| 30. Factory Hollow* | do | Houghton, 1912; Parker, 1919. |
| 31. Vita Taft* | do | Houghton, 1912; Wray and Schoff, 1953. |
| 32. Conn* | do | Wray and Schoff, 1953. |
| 33. Boughton Hill Fort* | do | Houghton, 1912; Wray and Schoff, 1953. |
| 34. Boughton Hill* | do | Do. |
| 35. Bunce* | do | Do. |
| 36. Beal* | do | Do. |
| 37. Ketchum* | do | Houghton, 1912. |
| 38. Steele* | do | Do. |
| 39. Marsh* | do | Houghton, 1912; Wray and Schoff, 1953. |
| 40. Fox* | do | Do. |
| 41. Onaghee* | do | Parker, 1922. |
| 42. Belcher | Genoa Fort | MacNeish, 1952 b. |
| 43. Richmond Mills | do | Do. |
| 44. Woodley | do | Do. |
| 45. Myer's Station | do | Do. |
| 46. Genoa Fort* | do | Do. |
| 47. Pompey Center* | Madison | Wintemberg, 1936; MacNeish, 1952 a, b. |

See footnote at end of table.

COMPONENTS OF THE IROQUOIS ASPECT, NORTHEASTERN PHASE, WOODLAND PATTERN—Continued

| Components | Focus | Reference |
|---|---|---|
| 48. Thurston* | Madison | MacNeish, 1952 b. |
| 49. Diable* | do | Do. |
| 50. Munnsville* | do | Do. |
| 51. Ellis | Tioga | Lucy, 1950. |
| 52. Murray* | do | Murray, 1921. |
| 53. Chemung Bridge* | do | Do. |
| 54. Queen Esther's | do | Do. |
| 55. Old Sheshequin | do | Do. |
| 56. South Towanda* | do | Witthoft, 1955. |
| 57. Case* | do | Do. |
| 58. Homet's Ferry* | do | Do. |
| 59. Quiggle* | do | Lucy, 1950; Witthoft, 1954. |
| 60. Brandt* | do | Witthoft, 1955. |
| 61. Washingtonboro* | do | Cadzow, 1936; Witthoft, 1955. |
| 62. Schultz* | do | Do. |
| 63. Strickler* | do | Do. |
| 64. Shenk's Ferry* | do | Do. |
| 65. Herriot* | do | Manson and MacCord, 1940; 1943; Witthoft, 1952; 1955. |

*Denotes sites containing historic materials.


LAKE ERIE
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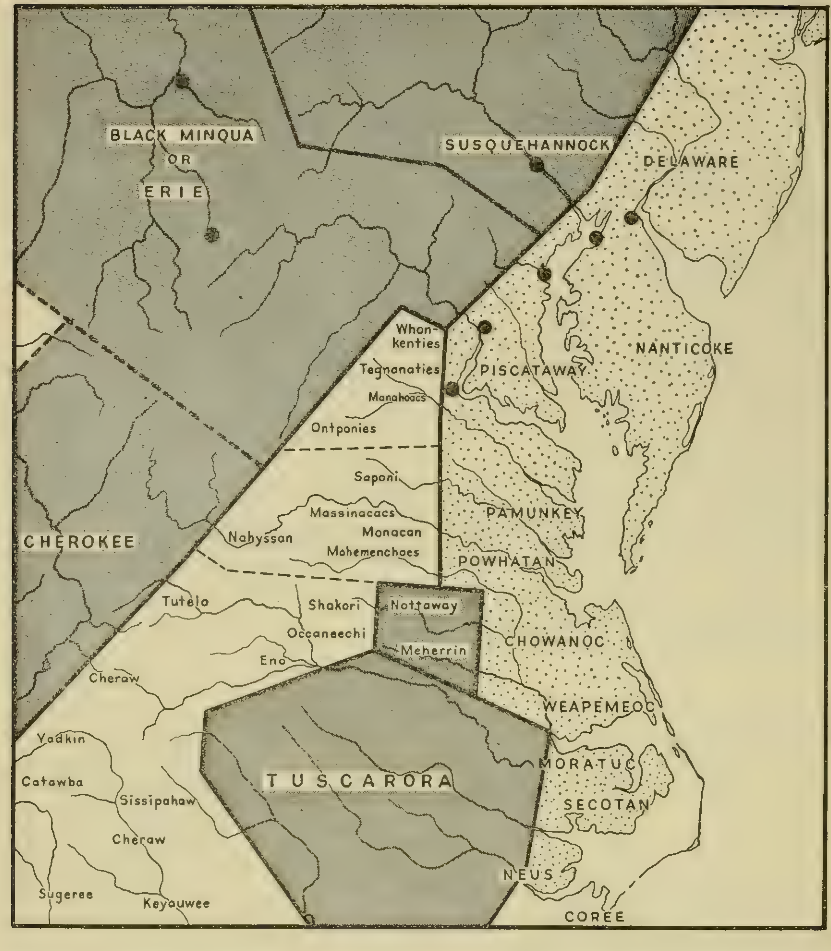
MAP 12.—Components of the Iroquois Aspect, Northeastern Phase, Woodland Pattern.


BLACK MINQUA
OR
ERIE
SUSQUEHANNOCK
DELAWARE
Whonkenties
Tegnanaties
Manahoacs
PISCATAWAY
NANTICOKE
Ontponies
Saponi
Massinacacs
Monacan
Mohemenchoes
Nahyssan
PAMUNKEY
CHEROKEE
POWHATAN
Tutelo
Shakori
Nottaway
Occaneechi
Meherrin
CHOWANOC
Eno
Cheraw
WEAPEMEOC
Yadkin
MORATUC
Catawba
TUSCARORA
Sissipahaw
SECOTAN
Cheraw
NEUS
Sugeree
Keyauwee
COREE

Map 13.—Probable distribution of Iroquoian tribes. Black circles indicate known locations of Black Minqua or Erie groups.

The second statement, from Gallinee, tells us that in 1668 two canoes of Senecas came to Montreal to trade, and told La Salle

> . . . of such marvels of the River Ohio, which they said they knew perfectly. . . . They told him that this river had its source three days' journey from Sonnontouan, and that after a month's travel he would reach the Honniasontkeronons and the Chiouanons, and that after having passed these and a great waterfall, which there was in the river, he would find the Outagame and the country of the Iskousogos, and finally a country so abounding in deer and wild cattle that they were thick as the woods, and such great numbers of people that there could be no more. [Margry, 1876–86, p. 116.]

In the following year, 1669, when the Abbe Gallinee attempted to obtain a prisoner from the Ohio from the Seneca to act as a guide for

La Salle on his intended journey to that river, he was informed that the Toaguenha [Ontoagnnhe] who lived there were an evil people who would attack them in the night, and that, furthermore, he would also run the risk of being attacked by the Antastoez [Andaste] (Margry, 1876–86, pp. 137–138).

Since the Iroquois already had defeated the Erie in 1655 and 1656, it is unlikely that these statements refer to them. This seems to be confirmed by the names given which refer to Algonquian groups, the name Ontoagonnha apparently being a general term referring to both the Honniasontkeronon and Chiouanon. The statement of 1668 makes it clear, however, that the Honniasontkeronon and Chiouanon lived on the Ohio *above* the falls at Louisville. The old Erie territory therefore must have been farther east. Relating this to the archeological picture, it would seem that the Honniasontkeronon and Chiouanon (Shawnee) occupied the territory of the Fort Ancient Aspect, while the Erie-Black Minqua-Massawomeck inhabited the area of the Monongahela Aspect. This interpretation of the early tribal distribution of the middle Appalachian region is depicted in map 13.

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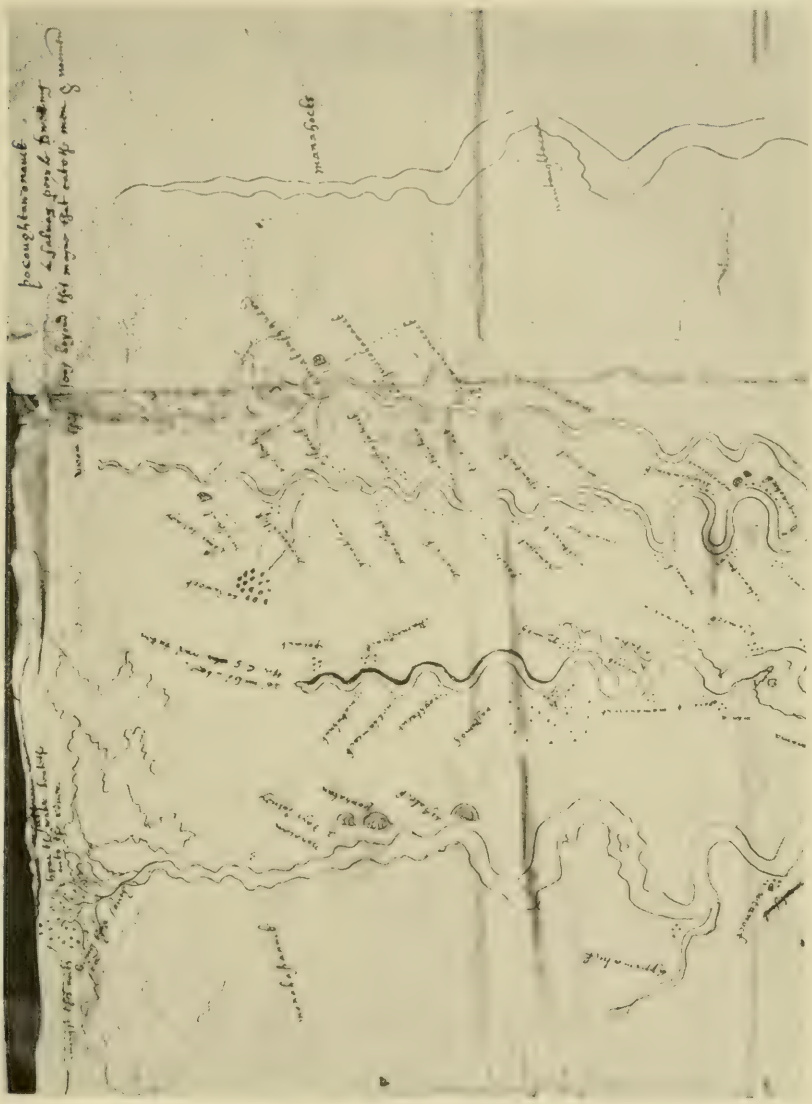

Facsimile of section of Anonymous-Zuñiga map of c. 1608.

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# EL LIMÓN, AN EARLY TOMB SITE IN COCLÉ PROVINCE, PANAMA

By MATTHEW W. AND MARION STIRLING

682-611—64——20

# ILLUSTRATIONS

## PLATE

(Follows page 254)

27. Incised slender vases.

## TEXT FIGURE

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17. Incised globular pots ........ 252

# EL LIMÓN, AN EARLY TOMB SITE IN COCLÉ PROVINCE, PANAMA

By Matthew W. and Marion Stirling[1]

During the course of our archeological investigations in Panama in the month of April 1951, Mr. Simeón Conte of Penonomé guided us to an archeological site in the mountains back of Penonomé near a place called El Limón.

The site consisted of a small burial ground with shoe-shaped shaft tombs about 8 feet deep scattered for 100 yards along the top of a high ridge. At the time of our arrival about nine tombs had been opened; these apparently were all that the looters had been able to find. Miguel Conte had acquired the contents of one of these tombs, which he generously gave to us. The grave offerings consisted of four tall slender vases and two globular pots with incised decorations.

The four vases are similar in size and form (pl. 27). Each rests on a relatively small flat base tapering upward to a slender waist, then flaring outward to a wide trumpet-shaped rim. About two-thirds of the way upward each vase is encircled by a raised beveled ridge, the upper portion of which on three of the specimens is further embellished with small coffee-bean-like appliqued nodules. The nature of the incised decorations can best be seen in the illustrations.

The natural color of the pottery is a pinkish buff, but a polished brown slip had been applied, remnants of which remain on all four examples. The tempering consists of crushed rock in which can be seen some large fragments of clear quartz.

The two pots are of the same ware (fig. 17). They are subglobular in form with round bottoms. The smaller pot has an outflaring rim, and the other probably had a similar rim, but it has been entirely broken off. The body of each pot is almost completely covered with an incised herringbone design. The pattern on the smaller pot is particularly interesting as it is produced by negative incising—if such a term may be used. The incising was done with a broad chisellike instrument, producing between the strokes narrow raised ridges which form the design.

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[1] We are grateful to Mr. Edward G. Schumacher, artist for the Bureau of American Ethnology, for the line drawings in this paper.

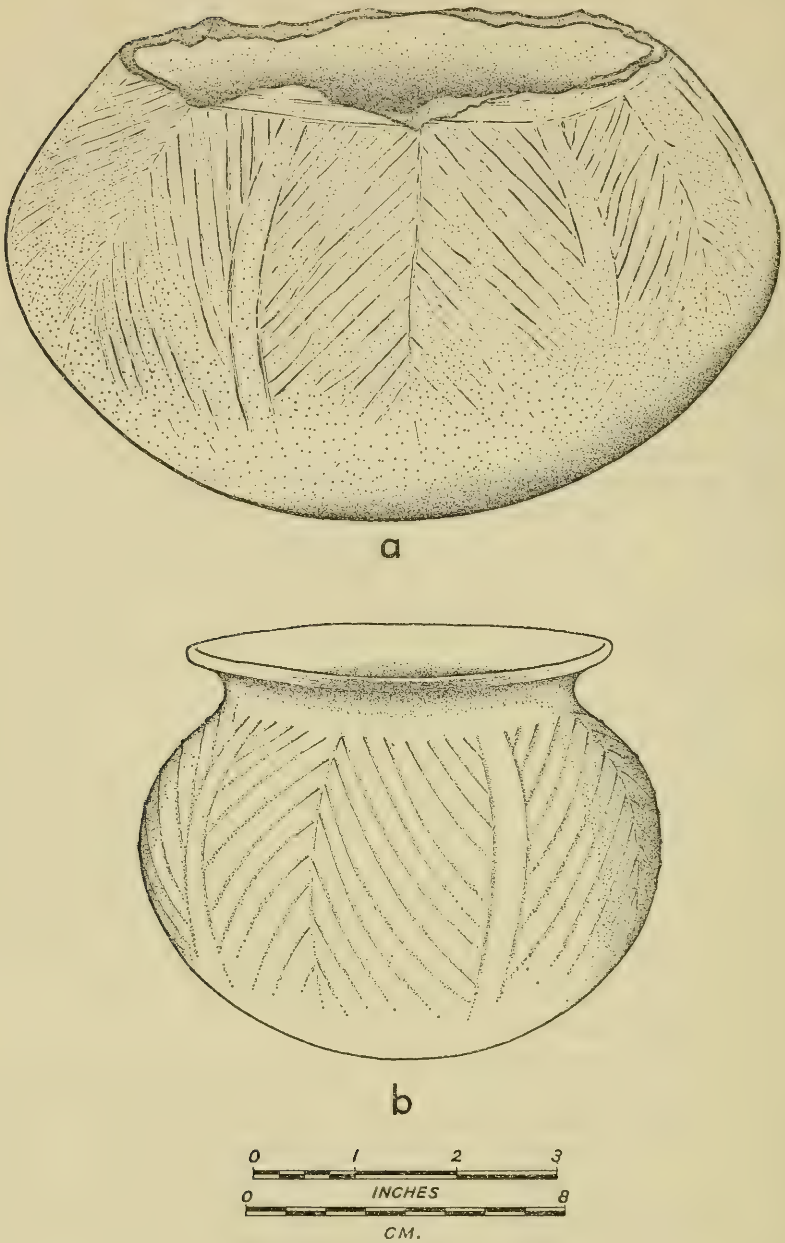

Figure 17.—Incised globular pots.

It is possible that the tall "vases" were stands for the round-bottomed pots. This theory would sound more probable if it were possible to determine that there were originally four instead of two pots in the tomb. Had they been broken, it is likely the looters would have thrown them away. It is our impression that this is an early ware, possibly the earliest type of tomb ware from Panama.

An apparently related type is found in Chiriqui. This type was first described by Holmes (1888, p. 87). In his classification of Chiriqui wares he describes it as the scarified group. Holmes states:

> This group is represented by about forty specimens and is worthy of especial attention. It comes from the graves of two localities, one near C. E. Taylor's hacienda, north of David, on the slopes of Mount Chiriqui, and the other at Alanje, southwest of David. As a variety of ware it stands so entirely alone that had it arrived unlabeled no one would have recognized its affinities with Chiriquian art. It is rather inferior in material, grace of form, and surface finish, and the decoration appears to belong to a lower grade of culture than that of the other groups.

Holmes speculates that it is a degenerate type, and therefore late. He says further (ibid., pp. 88–89):

> Nearly all of the vessels are tripods, but a few have rounded or flat bottoms and a few are supplied with annular stands. The walls are thick and the shapes are uncouth or clumsy. The paste is coarse, poorly baked, and friable; near the surface it is a warm reddish or yellowish gray; within the mass it is a dark gray. . . . These vessels are embellished by painting, incising, or scarifying and by modeling in relief. Color was not employed in the production of designs, but a dark Indian red pigment was daubed over that part of the surface not occupied by incised ornament. Little or no slip was used and the rude geometric patterns were executed with pointed tools in a very haphazard manner.

In general Holmes' description fits the El Limón material, but there are a number of differences. His material has no vase forms, and tripod supports are lacking in the El Limón specimens as well as the application of red paint. The tripod supports are evidently solid. However, the scarified designs are similar, as are the flat and rounded bottoms. Scarified material is shown in Holmes' illustrations (figs. 118 to 127). His figure 122 in particular resembles the material from El Limón.

More recently, Wolfgang Haberland (1960) has published another find of ceramics closely similar to the Holmes material, from Aguas Buenas in Costa Rica, just across the border from Panama.

At Mojara in Herrera Province, we found in our excavations a somewhat similar vase, associated with polychrome ware. This is a much more handsome piece and is made of harder, fine-textured ware. The encircling element consists of two notched fillet bands, the lower of which turns downward at each side to the base of the vessel. At this point on each side is a projecting conventionalized animal head from which two more notched fillets run downward, parallel with the other two.

Under the outflaring rim is a triple row of heavy punctate dots. Between these and the encircling fillets is a zone of highly polished rich mahogany brown slip. The interior of the vessel is of the same polished brown.

The fundamental points of difference with the El Limón specimens is that the Mojara example has a hollow base, lacks the slender waist, and lacks incising. Also, it is somewhat larger, being 9¼ inches high.

Dr. S. K. Lothrop kindly called to my attention a number of specimens, from near David, in the Peabody Museum, Harvard University (C–2809, C–2813, C–2817, C–2823) which also belong to this class of ware. Dr. Lothrop shares our impression that this is an early type of ware.

While the small number of specimens from El Limón make speculation unsafe, nevertheless we feel that this material, lacking paint and tripod supports, is the earlier form. The simple solid supports of the Chiriqui and Costa Rican sites may well be ancestral to the later developed hollow supports in the same area. The simple application of red paint may be a forerunner of the later elaborate polychrome ware, while the primitive applique work might precede the later more complex type found, for example, on Chiriqui alligator ware.

The simple scarification and incising of El Limón ware could in turn be an outgrowth from the type of decoration found on the early Monagrillo ware.

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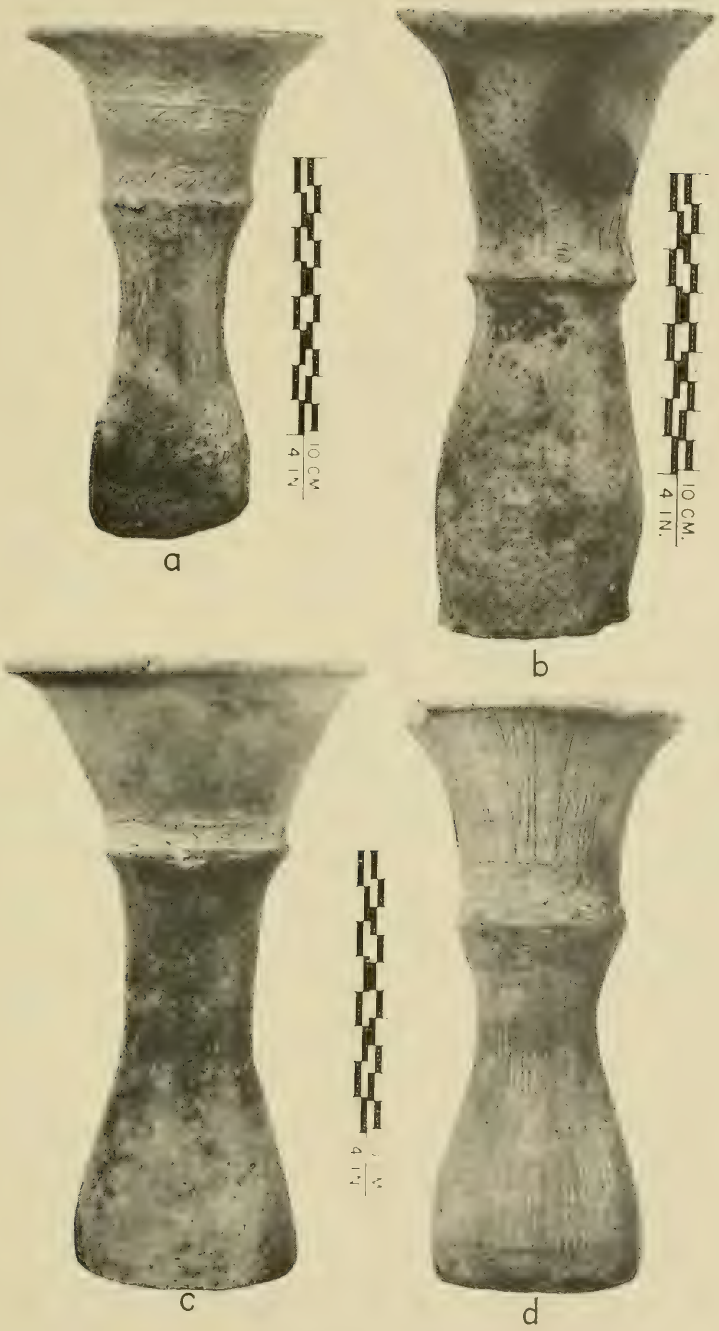
10 CM
4 IN
a
10 CM.
4 IN.
b
4 IN
c
d

Incised slender vases.

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# ARCHEOLOGICAL NOTES ON ALMIRANTE BAY, BOCAS DEL TORO, PANAMA

By MATTHEW W. AND MARION STIRLING

682-611—64——21

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# ARCHEOLOGICAL NOTES ON ALMIRANTE BAY BOCAS DEL TORO, PANAMA

By Matthew W. and Marion Stirling

## INTRODUCTION

Since there appears to be no information on the archeology of the Almirante Bay-Chiriquí Lagoon region, we, together with Richard H. Stewart, took occasion to visit briefly Almirante Bay during the month of April 1953 as an extension of our work for the National Geographic Society-Smithsonian Institution on the north coast of Panama the preceding winter.

During 10 days of rather intensive activity, we visited all of the principal islands and a considerable portion of the mainland coast of Almirante Bay. Systematic questioning of natives elicited very little information as to archeological sites. Most informants denied having seen or heard of evidences of aboriginal occupation in the area. Indeed, on completion of our survey we concluded that archeological sites in the vicinity are neither numerous nor conspicuous. However, we did locate three sites worthy of excavation, and we photographed several carved stone objects found in the region.

In the relatively level area north of Almirante, which has been extensively cleared for banana plantations, nothing appears to have come to light. In the remainder of the district the search for sites is hampered by the heavy growth of tropical jungle which covers most of the ground.

The Almirante Bay-Chiriquí Lagoon region apparently followed the pattern of the rest of the north coast of Panama in that permanent settlements were established toward the headwaters of the rivers and not along the coast.

The immediate incentive for our visit to Almirante was an invitation from Dr. Gustav Engler, director of the Chiriquí Land Company Hospital at that place. Dr. Engler has long been interested in the antiquities of Central America and has a small collection of artifacts from Costa Rica and Panama.

As a guide, Dr. Engler secured for us the services of Teodor F. Machazek, a longtime resident of the region and a surveyor well acquainted with the section. Through the courtesy of Mr. G. D. Munch, at that time superintendant of the Chiriquí Land Company, we were the guests of the company, enjoying the facilities of their spacious and comfortable guesthouse during our entire stay. We owe a particular debt also to Rev. Robert W. Turner III, who generously gave us the use of his launch for our rather extensive survey. This courtesy was essential to the success of the work since almost all travel in the region is by water.

We are grateful to Mr. Edward G. Schumacher, artist for the Bureau of American Ethnology, for the line drawings in this report.

Finally, we wish to thank Mr. and Mrs. T. W. Dunn, who accompanied us to Boca del Drago. They gave unstintingly of their time and information collected regarding archeological sites during a long residence in Central America while in the employ of the United Fruit Co.

## HISTORICAL BACKGROUND

Information concerning the aboriginal inhabitants of Almirante Bay and the Chiriquí Lagoon is very meager. However, there can be little doubt that the Indians occupying the region at the beginning of the 16th century were the Guaymí, whose descendants still live in the vicinity.

Curiously enough, the most satisfactory descriptions are those of the Columbus expedition of 1502.

The interpreters abducted by Columbus at Puerto Limón, Costa Rica, could speak the language of the natives as far south as the Coclé del Norte River, an area which corresponds pretty well with the hypothetical distribution of the Guaymí along this coast. Ferdinand Columbus, who gives the most complete account, does not describe the habitations of the natives encountered on Almirante Bay and the Chiriquí Lagoon, but he states that somewhat farther to the eastward they lived in single houses separated one from the other by considerable distances. He also states that their permanent habitations were not along the coast, but well up the rivers; an observation confirmed by our archeological reconnaissance in the area.

Oviedo, in describing the 1536 expedition of Felipe Gutierrez on the north coast of Veraguas, relates that their villages normally consisted of four or five large houses. This description would seem to correspond with the archeological evidence at the Darkland site which we examined on Almirante Bay.

The scant archeological remains around Almirante Bay and the Chiriquí Lagoon do not seem to bear out the rather considerable population indicated by the Columbus accounts. It is probable that the natives living up the rivers heard of the coming of the ships of Columbus, the first to visit this coast, and descended to the bay for the occasion, thus accounting for an abnormal concentration of people.

Ferdinand Columbus tells us that as soon as the ships anchored in Almirante Bay, which the natives called Carambaru, the boats went to one of the islands where there were 20 canoes on the beach. The natives were described as being "as naked as the day they were born." One of these was wearing, hanging around his neck, a gold disk; another, a gold eagle.

On the mainland the Spaniards were met by 10 canoes and saw considerably more gold worn in the form of ornaments. The men were described as wearing narrow loincloths as their only garments, with their faces and bodies painted all over with designs in red, black, and white.

It is interesting to note that the Guaymí today still use these same colors for their face and body paintings, although now they have adopted clothing.

Pedro de Ledesma says that at one place 80 canoes gathered around the ships, and that the natives wore gold ornaments consisting of "crowns," disks, eagles, frogs, tigers, etc. These, of course, were of the same type as the gold ornaments that have been found in such abundance in graves in Chiriquí and Veraguas. Unfortunately, the Spaniards were not much interested in describing other aspects of material culture, although a number of stray items are mentioned.

From Almirante Bay the ships of Columbus entered the Chiriquí Lagoon, called Aburena by the Indians. Here they were met in a more hostile manner by even greater numbers of Indians, who blew horns, beat drums, and created a tremendous din. This reminds us of the present-day noisemaking activities of the Guaymí during their "Balseria" ceremonies.

At Guaiga, a river 12 leagues east of the Chiriquí Lagoon, the Spaniards again landed among a large concentration of Indians. Just beyond here, at a place called Catiba, Ferdinand Columbus says:

> This was the first place in the Indies where they saw any sign of a structure, which was a great mass of wall or imagry, that to them seemed to be of lime and stone; the admiral ordered a piece of it to be brought away as a memorial of that antiquity.

Since Columbus speaks of the structure as "an antiquity," it evidently was not constructed by the contemporary natives. When we were on our reconnaissance of the Panama north coast, we made diligent inquiries of many natives who professed to know the region well but all denied seeing or hearing of such a structure. We are inclined to believe that the men with Columbus saw some natural formation, possibly a limestone dike, which they mistook for a wall. There is a great deal of limestone in this region, such as the cliff and ridge where our cave site Boc–2, at the east end of Almirante Bay, is located.

In 1951 when we were on the Río Indio we heard from several natives of a "casa de laja" on one of the tributaries farther up the river. It was described as a stone masonry ruin, definitely not of Spanish construction. With the stone wall of Columbus in mind, we went to considerable trouble to visit the ruin, eventually succeeding. The "casa de laja" turned out to be a curious natural tunnel about 50 yards long through a horizontally stratified sandstone formation. The only evidence of occupation, past or present, was a huge cluster of bats hanging from the ceiling.

At some time before 1540 an Aztec colony was established in the Sixaola Valley, on the mainland back of Almirante Bay. Before the middle of the 17th century this group, known as the Sigua, had moved to Bastimentos Island in Almirante Bay, where they eventually settled in four towns. Here they maintained themselves with varying degrees of fortune until about the year 1760. The interesting history of this band, the southernmost outpost of the Aztecs, has been outlined by Lothrop.

Rev. Ephraim Alphonse, who has lived among the Valiente Guaymí for more than 25 years and speaks the language fluently, has found some interesting traditions that evidently refer to this group. The Valiente Guaymí still retain the term "Montezuma," meaning ruler.

A tradition which is frequently recounted at the present time relates to the "Dekos," a group of conquerors who came from the north in large canoes having paddles studded with pearls. Their leader was called Siri Klave. The Dekos are always pictured as being more civilized and smarter than the Guaymí. Some of the tales refer to contests in wits between Guaymí and Dekos leaders. In these contests the Guaymí were always defeated, as they were in military combat (Alphonse, 1956).

We spent considerable time on Bastimentos in a futile search for remains that might indicate a settlement of the Aztec Colony, which all the evidence seems to indicate was located here. Not only did our personal search result negatively, excepting for a few nondescript sherds near the mouth of a small stream by the present village of Bastimentos, but the old inhabitants who had spent their lives farming on the island insisted that they had seen no sherds nor other evidence of occupation, except a metate and a mano (pl. 41). We visited the spots where these were found, but saw no evidence of a site.

After the voyage of Columbus, the Almirante region acquired a reputation for being rich in gold. It was frequently visited thereafter by gold seekers and slavers with the result that native culture was pretty well broken down. There is little in the records of these more or less transient visits that is of help to the archeologist.

Modern accounts of the Guaymí are unsatisfactory, even for areas considerably removed from the Northwest Panama Coast.

During the last quarter of the 19th century A. L. Pinart made some observations on the Guaymí of the Chiriquí Lagoon region, and more recently they have been studied by Ephraim Alphonse.

Practically all of the available early source material has been collected and published by Lothrop (1950) in his excellent Veraguas report.

## CERAMIC STUDIES

A considerable amount of time was spent in examining the temper of the various wares from the several sites herein described. The only instruments used in this connection were small hand lenses. Samples of the wares were shown to several professional archeologists. Their conclusions as to the nature of the tempering material differed so widely among themselves and with our own tentative determinations that we decided to follow the advice of Miss Anna O. Shepherd of the Ceramic Technological Laboratory, Carnegie Institution of Washington, D.C., and describe them in general terms rather than to guess at specific descriptions, a practice likely to lead to false assumptions.

All clays are originally derived from decomposition of igneous rocks and contain a certain amount of grit and fragments of unaltered rock. With the naked eye or a hand lens it is impossible to tell in most instances whether the grit is natural or hand ground. In general, the temper of the pottery from Almirante Bay is rounded sand mixed with angular particles.

Similar difficulties were experienced in studying the nature of slips. It was not always possible to distinguish between self slips, applied slips, and effects obtained by polishing. Here again we have tried to be not too categorical in our designations.

Hardness was determined by scratch tests in accordance with the Mohs scale.

Of the pottery excavated in the three Almirante Bay sites, the significant pieces are illustrated and complete data are given with the descriptions of each plate.

Since the excavations were small, we felt that it would be premature to give names to the pottery types encountered.

Colors have been identified in the Munsell color system. As every ceramist knows, the colors of primitive pottery vary considerably because of uneven firing conditions, as well as other factors. The same pot may contain several colors, blending, for example, from weak yellowish orange, to moderate orange, light brown, and black. In describing the pottery this fact has been taken into consideration and the best personal opinion given of each specimen illustrated in order to convey to the reader a proper understanding of the wares. The laboratory studies were made under fluorescent light. In instances where the buff has definitely fired moderate orange, it is so described. In Boc–1 and Boc–3, the buffs generally fired orange. In Boc–2, the buffs frequently fired brown.

The equivalents of Munsell color symbols are given according to I.S.C.C. (Inter-Society Color Council) Standards. When a specimen is unique, the Munsell equivalent is given in the text (Judd and Kelly, 1939). The following tabulation gives the general color equivalents used in this paper:

| | Munsell | I.S.C.C. |
|---|---|---|
| Light buff | 1Y8.5/4.5 | Pale yellowish orange. |
| Buff | 10YR7/4 | Weak yellowish orange. |
| | 10YR8/6 | Weak yellowish orange. |
| | 10YR6/4 | Light yellowish brown. |
| Dark buff | 5YR5/6 | Light brown. |
| Dark brown | 5YR2/2 | Dusky brown. |
| Orange | 5YR6/8 | Moderate orange. |
| | 10R5/8 | Moderate reddish orange. |
| Red | 6R5/8 | Moderate red. |
| | 10R4/8 | Moderate reddish brown. |
| Dusky red | 5R3/4 | Dusky red. |
| Deep red | 5R3/10 | Deep red. |

## SITE DESCRIPTIONS

### DARKLAND (BOC–1)

In the southern part of the bay, south of Cristobal Island, a long narrow point known as Darkland projects into the bay. This had been partially cleared for cultivation and the grazing of stock. The peninsula is formed by a rather flat-topped ridge which gradually increases in elevation from the point. Scattered along the top of this ridge were four large mortars made from unshaped stones (pl. 42, *b*). Just above this area and about 300 yards from the point, we discovered four midden mounds, each about 40 feet in diameter and 5 feet in height; apparently each was the refuse mound for a single house. Having no facilities for carrying much material at the time of our visit, we made in one of these mounds a single small excavation about 4 feet square and 2 feet deep. The mound proved to be rich in sherds and other materials. Among the more abundant forms were subglobular bowls, with incurving rims, of buff-colored ware with a coarse temper. This ware is characterized by a gray to black core, with margins ranging from weak yellowish orange to moderate orange. These were decorated with elongate punctations in rows, between incised parallel lines. The designs are geometric and tend toward triangular forms. Some of these bowls were further decorated with small nodes or bosses connected with incised lines or roughened bands. One specimen was of much thicker ware and had an excurvate rim (pl. 28, *a–i*).

Also abundant were sherds of large vessels with modeled applique designs on the body. One had two leaping porpoises (pl. 29, *a*). Another was an octopus (pl. 28, *l*), while still another fragment displayed what seems to be the tail of a fish (pl. 28, *n*).

One curious sherd consists of what appears to be a thick beveled rim with rectangular openings cut below the rim. It is possible that it is a part of a slotted pedestal base. If so, it is unusually thick and heavy (pl. 29, *f*; fig. 18, *e*).

Other pieces were from large pots with slightly outcurving rims. Some of these have red paint on the lip, others on either the exterior or interior. The majority are polished light buff on the interior (pls. 28; 29, *e*, *i*).

Excurvate, buff-colored rims with combed decoration on the interior and smooth on the exterior were almost identical with similar pieces from the site at Boca del Drago (Boc–3). This is a buff-colored ware with coarse tempering material (pl. 28, *k*).

One of the most individual wares is rather thin with finely ground temper and fine line red painting on a light buff slip (pl. 28, *m*).

Two sherds appear to be longitudinal sections of hollow vessel supports. The fact that one of these has horizontal red line painting strengthens this hypothesis since this is a normal type of decoration for the typical conical base tripod vessel characteristic of Chiriquí, examples of which were found in the nearby cave site (Boc–2).

Several small sherds were of very thin fine paste ware with polished surface painted red on buff. Because of the small size of the sherds it was impossible to deduce the vessel forms, but they were probably of small size.

Thick body sherds from large pots were quite abundant. These had a coarse sand temper and were usually fired buff on the exterior and black on the interior. Some of these had combed decoration on the exterior, some were smooth. This is apparently the same ware as that with modeled animals on the body, and is analogous to the large urns from Boc–3.

One flat awl with sharp point and sharp edges, made apparently from the leg bone of a deer, was the only bone implement found.

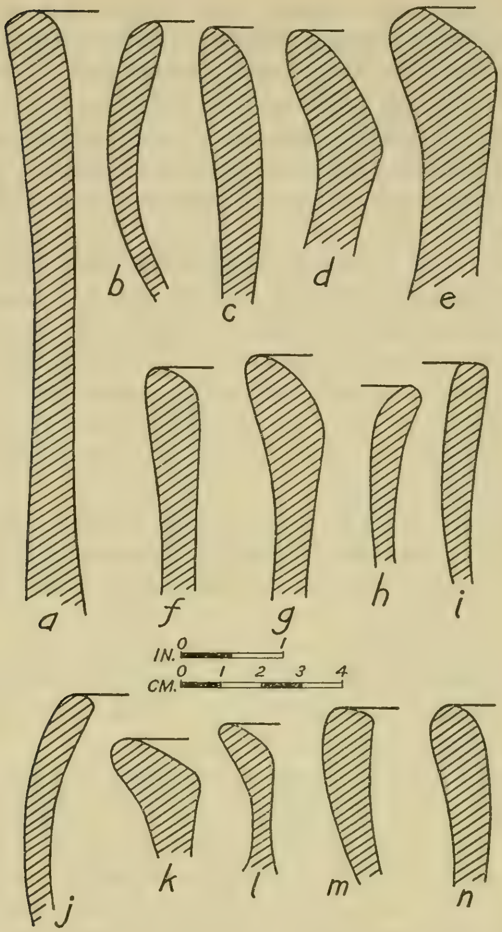

Figure 18.—Sherds from Bocas del Toro, site 1. *a*, Large rim sherd with applique porpoises, smooth orange interior, pl. 29, *a*; *b*, buff punctate bowl, smooth rim, triangular design, pl. 28, *a*; *c*, buff interior, exterior blackened with charcoal, pl. 29, *b*; *d*, smooth buff exterior and interior, pl. 29, *i*; *e*, heavy slotted rim (or base ?), pl. 29, *f*; *f*, light buff exterior and interior, red painted rim, pl. 29, *d*; *g*, smooth buff exterior and interior, punctate ware with incising, pl. 28, *b*; *h*, buff surfaces, interior of rim is combed, pl. 28, *k*; *i*, light buff exterior and interior with red painted lip, pl. 29, *c*; *j*, rough buff punctate ware with incising, pl. 28, *c*; *k*, smooth buff interior with red painted lip, pl. 28, *o*; *l*, smooth buff with inside lip painted red, pl. 29, *k*; *m*, smooth light buff interior with lip painted red, pl. 29, *j*; *n*, smooth light buff interior, charcoal on exterior, lip painted red, pl. 29, *e*.

Scattered throughout the excavation were a number of flint flakes and many coral branches.

The above-described material, it should be remembered, came from a small test pit and represents at best a most incomplete sample.

Boc–1 is by far the most promising site that we located on our survey of Almirante Bay. The small mounds are rich in content and a full scale excavation would without doubt give key results for this virtually unknown area.

## DARKLAND CAVE (BOC–2)

On a high jungle-covered ridge about 2 miles southwest of the Darkland peninsula there is a limestone cliff about 100 feet high. Along the base of this cliff are a number of caves containing the remains of human burials and accompanying offerings. The native who guided us to this spot had discovered the caves a few years before and said that he and his father had removed several complete pots, of which he was unable to give an adequate description, and a stone metate carved in the form of a jaguar.

We selected the most promising looking of the caves and excavated it completely. The cave, whose opening was about 20 feet across, extended about 30 feet into the cliff, with a ceiling of irregular height. The last 20 feet of the cave was filled to within about a foot of the ceiling and could not be entered until the fill was removed. The bulk of the artifacts recovered and a few fragments of human bone were in the upper 12 inches of the deposit. No evidence of human occupation was found below this surface level, although the fill averaged from 3 to 4 feet in depth.

Objects of stone consisted of a well-carved jaguar head broken from a metate of Costa Rica-Chiriquí type, and eight celts of mediocre finish (pl. 43, *g–n*). There were none of the type with flaring edge so common in Veraguas. One small triangular polished celt of a blue slatelike stone is 10 cm. long and 5 cm. wide at the blade. It is flat on one side and convex on the other. A chisel of limestone was 19.5 cm. long. There was also a small polishing stone of bright red jasper about 5 cm. in diameter (pl. 38, *e*, *f*, *g*). Scattered throughout the surface layer were many large marine conchs, principally *Strombus gigas* Linné and *Charonia tritonis nobilis* Conrad, and about 20 artifacts of unknown use made from the spire of the conch with a circular hole 5 cm. in diameter in the center (pl. 38, *a–d*).

Although five or six nearly complete vessels were recovered, the bulk of the pottery was in the form of scattered sherds, representing a considerable variety of forms and wares.

Apparently, the great majority of the vessels originally had a buff-colored surface, although some examples were dark buff and brown. In addition, various sherds are blackened by carbon, discoloring the surface as well as the paint.

All the sherds are coated to a certain extent with a white deposit caused by the dust in the limestone cave, a condition making it difficult to decide the original color of the pottery. In some instances, the red paint has turned orange and in others, dusky brown; it is difficult to decide the original hue. One example of this wide range in hue can be seen on the horizontal red line striping on the legs of the tripod vessel (pl. 30, *b*).

There were five examples of tripod vessels, two of which are fairly complete. One of these consists of smooth buff ware well coated with lime on both interior and exterior (pl. 30, *a*). The outflaring rim is 4.7 cm. wide. The interior is decorated with four groups of seven red perpendicular lines 0.3 cm. wide, spaced quadrilaterally. Each grouping is approximately 3.8 cm. wide. The edge of the rim is also painted red.

The other fairly complete specimen has the rim missing, but this was probably a bowl-shaped form (pl. 30, *b*). The body is roughened by horizontal striating. The legs are smooth, decorated with horizontal red line painting and three perpendicular slots 5.0 cm. long, 0.5 cm. wide. Two slots are on either side of the leg, near the top; the other in the center front near the foot, which is broken off. The most nearly complete leg has a modeled animal figure seated on the upper edge. The interior of the vessel is smooth and buff in color. Most of the exterior is blackened by carbon. This specimen is almost identical with two figured by Wassén, 1949 (figs., 9, *a*; 10) found near Boquete, Chiriquí.

Of the remaining three examples, two were of the buff striated type and the other, consisting of a conical base, is of thick buff ware. The

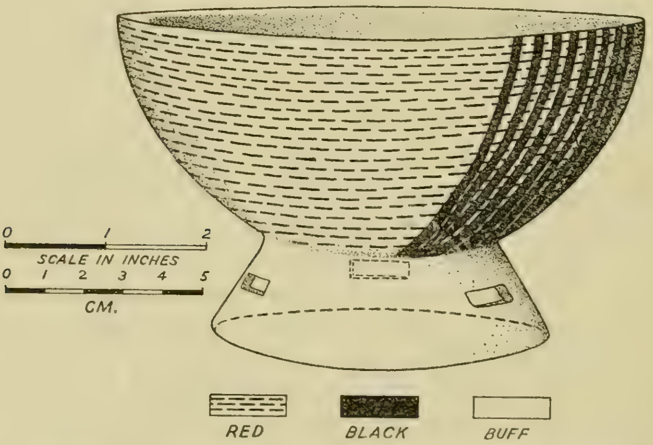

Figure 19.—Bowl with slotted pedestal base. Black core, dark buff margins; fine temper; base and interior of bowl polished dark buff; deep red slip on exterior of bowl on which were painted black perpendicular stripes extending from the rim to the juncture with the base; see pl. 31, *f*.

exterior is polished and partially dark brown from carbon. All of these are of hard fine-tempered ware, with black core and buff margins. There was one small pedestal base bowl (pl. 31, *f*; fig. 19) with three rectangular horizontal slots in the base. The base and the interior of the bowl are polished dark buff ware. The exterior of the bowl has a deep red slip on which were painted black perpendicular stripes extending from the rim to the juncture with the base, 6.8 cm. long. Vestiges of eight stripes can be seen on the portion of the bowl which was found. Whether the stripes encircled the entire bowl or were painted in groups cannot be ascertained. The ware has a fine temper, is rather thin, and is fired to a dark buff on the surfaces with a black core. This was the only pedestal base found.

Frying-pan incensarios were represented by one specimen, a transverse piece broken off from the base of the handle. It is made from a hard fine-tempered ware with a buff polished surface. It is painted red along the edges and has one transverse red line, 0.6 cm. wide (pl. 33, *c*). Similar but complete examples of this type were found by us at the Coclé site of Mojara in Herrera Province.

Small plain subglobular bowls were represented by seven specimens, two of which were more or less complete (pl. 30, *c*, *d*). These are rather crudely made from a buff-colored ware. The surface typically is carelessly smoothed. Plate 30, *c*, has a body diameter of 8.4 cm. and a body height of 8.0 cm. Plate 30, *d*, has a body diameter of 11.0 cm. and a body height of 7 cm.

Two of the subglobular bowls were polished brown, one polished dark buff, and another buff with a red lip. Most had small outflaring rims, some with rolled lips. Some were carbonized on the exterior from having been on an open fire. The rim variations can best be seen from the illustrations (pl. 33, *a*, *b*, *e*, *f*). One variation consisted of a combed exterior with a crude rectangular pattern and small nodes on the shoulder (pl. 31, *b*).

There were eight examples of bowls with vertical strap handles. Judging from the fragments found, these had been low hemispherical bowls with outflaring rims to which were attached a pair of opposing strap handles (pl. 31, *a*, *c*, *d*, *g*; fig. 21, *e*, *f*, *g*, *b*).

Plate 31, *a*, is made of polished dark buff ware weathered brown in places. The lip of the rim is painted red and extends 1 cm. onto the top of the strap handle. Directly in front of the strap handle on the interior of the outflaring rim are six vertical red lines, 0.2 cm. wide, 3 cm. long. The strap handle was modeled and stuck on the pot carelessly. It is 3.5 cm. wide.

Plate 31, *c*, is buff ware with a rim painted red extending 0.4 cm. down the exterior of the bowl and 0.4 cm. onto the strap handle, where it joins the rim. There is an irregular spot of red paint on the

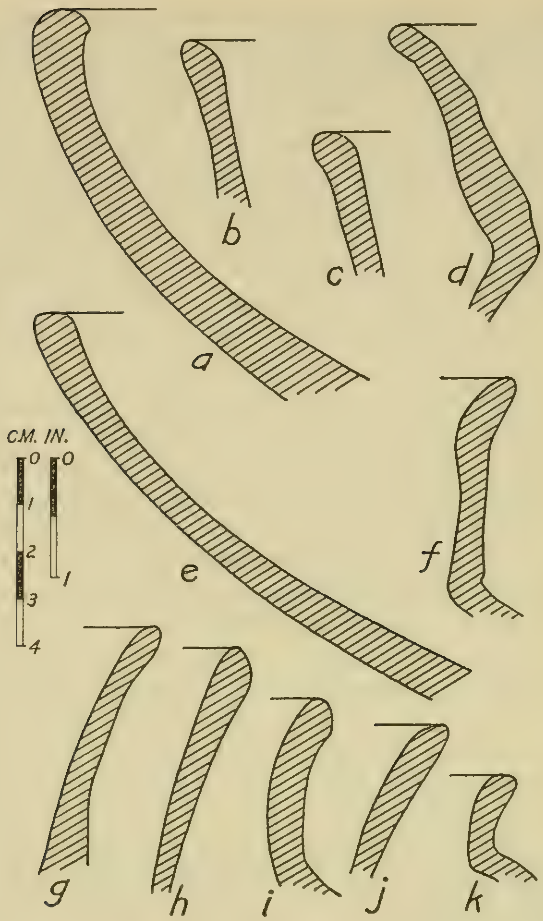

Figure 20.—Sherds from Bocas del Toro, site 2. *a*, Shallow bowl, pedestal base (?), red painted lip, dark buff interior and exterior, pl. 34, *g*; *b*, buff ware with smooth interior and exterior and red lip; *c*, buff ware, lip painted red with traces of red on interior; *d*, buff ware, red painted lip and convex curving collar, exterior carbon coated, pl. 36, *b*; *e*, shallow bowl or pedestal base (?), lip painted red, dark buff interior, red design on interior; *f*, polished buff interior, exterior rough and carbonized, red lip, pl. 32, *i*; *g*, buff ware with a rough exterior, smooth, interior, and fine temper, pl. 36, *d*; *h*, buff ware, carbonized black, polished interior, rough exterior, pl. 36, *f*; *i*, red painted lip, rough exterior and smooth buff interior; *j*, rough carbonized exterior and smooth buff interior; *k*, rough exterior and smooth buff interior.

body of the vessel. The temper is coarse. The exterior of the vessel and the rim are smooth, while the interior is slightly rough. The strap handle is 2.7 cm. wide.

Plate 31, *d*, is buff ware weathered brown. The rim probably had been painted red. There appears to have been a strip of pottery

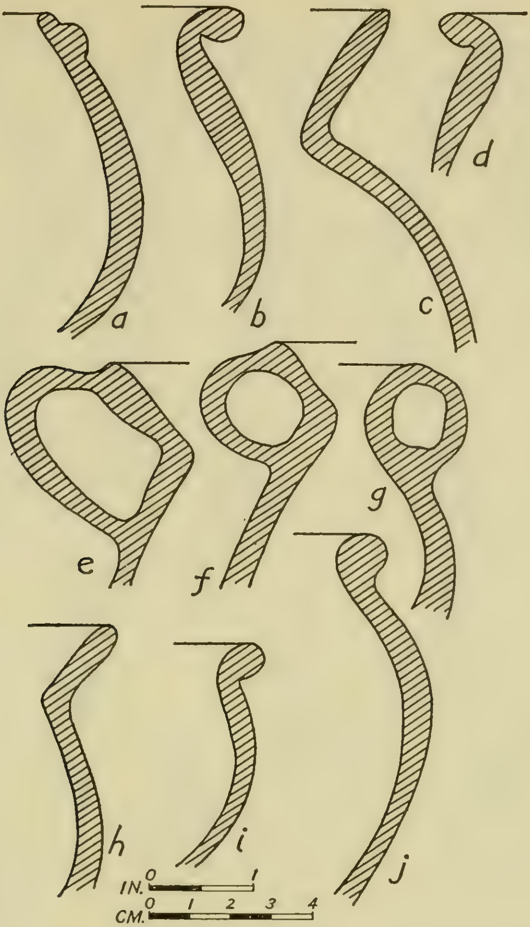

Figure 21.—Sherds from Bocas del Toro, site 2. *a*, Buff ware, exterior blackened by carbon, had strap handle, incised design, roughened zones, bosses, smooth interior, pl. 31, *e*; *b*, buff with loop handle, covered with limestone dust inside and out, pl. 31, *g*; thin buff tripod jar, carbonized exterior and smooth interior; *d*, polished dark buff interior and exterior, pl. 33, *b*; *e*, polished dark buff, lip painted red and vertical lines on interior of rim, strap handle, pl. 31, *a*; *f*, buff interior and exterior with red rim, pl. 31, *c*; *g*, buff weathered brown with smooth interior and exterior and strap handle, pl. 31, *d*; *h*, buff, polished interior, exterior of rim roughened, pl. 33, *f*; *i*, buff weathered brown with polished interior, pl. 33, *a*.

appliqued on top of the strap handle as decoration. The handle is 1.7 cm. wide.

One specimen has a plain incurving rim. This had a roughened zone below the rim, decorated with incised lines connecting small hemispherical nodes. Another roughened zone runs around the middle of the bowl. The edge of the rim is painted dark red (pl. 31, *e*; fig. 21, *a*).

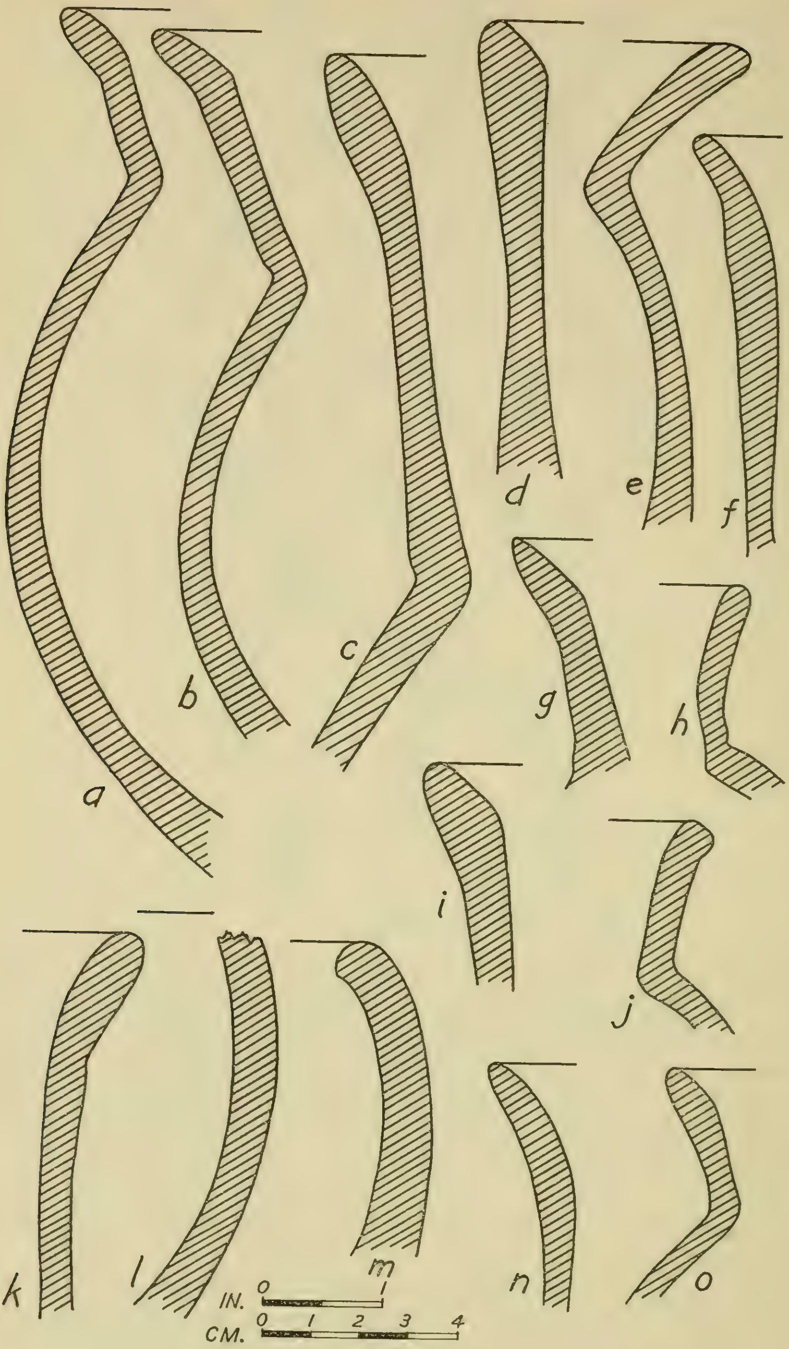
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FIGURE 22.
For legend, see opposite page.)

Plate 31, *g*, shows buff ware with a rolled everted rim and a loop handle.

The most abundant form consisted of fragments of 17 large subspherical pots with medium outflaring rims. Of these, three were sufficiently complete to give an idea of the body shape. There is considerable individual variation in the rim forms (pl. 34, *a*, *b*, *c*; fig. 22, *a*, *b*, *e*).

One broken, but almost complete, example had the entire exterior surface roughened as though by rolling it with a corncob or a rough fabric. The interior is well smoothed. The lip is painted red. A series of rather undefined vertical ridges runs around the middle of the body as an additional decorative feature, and a series of indentations runs around the base of the collar (pl. 34, *a*; fig. 22, *a*).

The remaining examples are carelessly smoothed on the exterior and carefully smoothed on the interior. Some had red-painted lips and some were coated with carbon from being over an open fire. The ware is coarse, fired to a black core, with moderately reddish orange margins and dark-buff surfaces. Most have plain round lips, but on two examples the lips are beveled.

There were seven fragments (six illustrated) from large vessels with high collars (pl. 35; fig. 22, *c*, *f*). The collars are roughened on the exterior by combing. One has a smooth zone below the point where the collar joins the body; below this the combing begins again (pl. 35, *d*). In all examples the interior is carefully smoothed. Two had a red-painted lip. On the rim, one sherd has part of an appliqued octopus, suggestive of similar designs from Boc–3. This sherd has a dark-buff polished interior and a red-painted lip. The exterior is rather rough (pl. 35, *a*, fig. 22, *d*).

Large shallow bowls were represented by two specimens. These are similar in form to the pedestal base "fruteras" from Coclé and Veraguas, but probably did not have such bases since none were found in Boc–2. One of the specimens has a beveled lip, painted red, and

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FIGURE 22.—Sherds from Bocas del Toro, site 2. *a*, Buff ware, red painted lip, smooth interior, roughened exterior, pl. 34, *a*; *b*, buff ware, red lip, exterior rough and somewhat blackened, pl. 34, *c*; *c*, buff ware, smooth interior, exterior of collar combed, smooth on exterior below collar, pl. 35, *c*; *d*, dark buff polished interior, exterior blackened, rough, applique design, lip painted red, pl. 35, *a*; *e*, dark buff ware, roughly combed collar, smooth interior, pl. 34, *b*; *f*, polished dark buff interior, combed exterior, pl. 35, *b*; *g*, polished buff ware, fine combing on collar, smooth below collar, deep incised groove separating collar from body, pl. 9, *h*; *h*, smooth buff slip on interior, exterior rough, pl. 36, *i*; *i*, smooth buff interior, exterior rough, deep groove separates collar from body, red lip, pl. 36, *k*; *j*, polished buff on interior, roughened exterior, red lip, pl. 36, *e*; *k*, dark-buff ware, smooth interior, rough exterior, lip painted red, pl. 34, *e*; *l*, body sherd, buff ware coated with limestone dust, smooth exterior and interior; *m*, dark buff ware, smooth interior and exterior, pl. 34, *f*; *n*, polished buff interior, rough buff interior; *o*, carbonized buff ware, smooth interior and exterior, pl. 36, *c*.

has a smooth exterior and interior (pl. 34, *g*; fig. 20, *a*). The other has a plain lip also painted red, and a design consisting of six red stripes 0.6 cm. wide and 7.5 cm. long projecting into the dark buff interior. Each stripe is rounded at the end, not blunt or squared off (pl. 34, *d*; figs. 23, 20, *e*). The exterior is roughened by combing below the rim, and below this is a row of roughened vertical ridges. In both examples the ware is fairly thick and is grit tempered. The color on the surface is dark buff, weathered a dark brown.

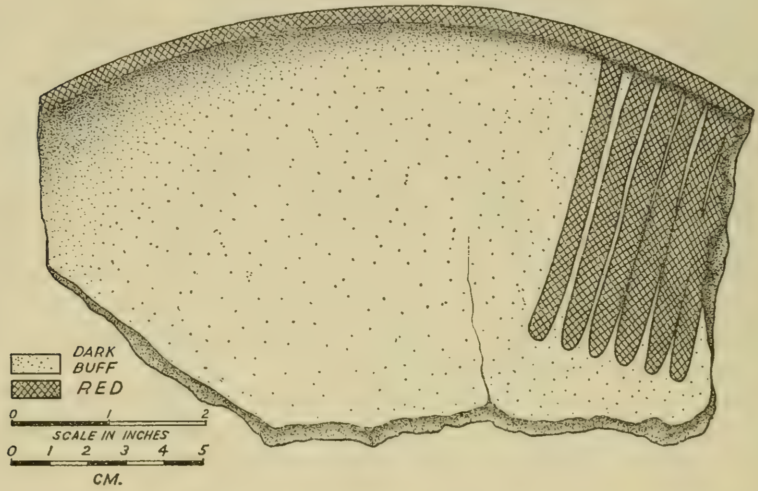

FIGURE 23.—Shallow bowl from Bocas del Toro, site 2. Polished dark buff interior decorated with 6 red stripes and red painted lip. Exterior badly eroded but apparently had vertical ridges around middle similar to pl. 34, *a*. Medium temper. 1 cm. thick.

There were four body sherds of thin, hard, fine paste ware, evenly fired, with no black core, 0.4 cm. thick. Three of these have a dark-orange (2.5YR 5/8) (Munsell system) smooth surface, while the other has a burnished-brown (10YR 3.8/2) exterior surface. These are definitely different from the other sherds.

There were three sherds of red on buff ware. Two are rims with red-painted lip and fine vertical red lines on the interior of the rim. The sherds are 0.8 and 0.6 cm. thick, respectively. The interior is polished, the exterior rough (pl. 32, *f*, *h*). The other example is a body sherd with smooth surface, having painted on it a simple red-line geometric design. The interior is smooth and unpainted buff (pl. 32, *e*).

Among the miscellaneous specimens was a low concave vessel support painted red where it joined the body of the vessel. The remainder of the exterior and the interior are buff. The beveled supporting edge is roughened with diagonal scoring (pl. 33, *d*).

The neck of a small jar was of rather thin dark-buff ware. It was encircled by two parallel rounded ridges decorated with crude incising (pl. 32, *b*).

Part of the neck of a small vessel of hard medium-tempered ware was decorated with lunate punctations in parallel rows between double incised lines. This decorated area is separated by a rounded ridge between incised lines from a smooth-zoned red band. The interior is definitely painted red on one half, probably the neck. The other half is buff. The exterior design was zoned red on buff (pl. 32, *c*).

One sherd of rather thick, hard ware has a polished dark buff (carbonized almost black) exterior with part of a raised design (pl. 32, *d*).

Among other miscellaneous pieces was a flat base of dark-buff ware (pl. 32, *a*).

The cave site (Boc–2) was probably a burial place, in which had been placed offerings of shell, stone, and pottery. There was no evidence of fires having been made in the cave. Furthermore, the lowness of the ceiling would not have made it a suitable dwelling site, nor would its location near the summit of a high steep mountain. The presence of fragments of human bones would seem to make its burial function certain. The pottery shows a connection on the one hand with that from Boc–3 and on the other hand with Chiriquí ware from the vicinity of Boquete. The lowest point, for some distance, in the Continental Divide lies directly south of Almirante Bay in direct line with Boquete. An old trail which is still in use crosses this pass from the northern part of the Chiriquí Lagoon. It is probable that this natural route was in use in aboriginal times.

## BOCA DEL DRAGO (BOC–3)

At the extreme northwestern corner of Almirante Bay the Boca del Drago is a narrow pass separating the mainland from Colon Island. On Colon Island, on the east side of the pass, just below Cauro Point, there is a cove with a crescent-shaped sand beach. At a point toward the south end of the beach there was formerly an aboriginal site, which has been largely destroyed in recent years by wave action from storms. Several native fishermen living on the cove told of large urns being exposed on the beach after these storms. As described, these urns were as much as 3 feet in height, with wide mouths and high outflaring collars or rims.

We conducted excavations on the beach in the area indicated and found numerous sherds of such urns as well as fragments of smaller vessels. There were also a few nondescript fragments of human bones, suggesting that the large vessels were burial urns.

We made some tests in the forested, undisturbed soil back of the beach, but found no traces of a village site or burials.

The sherds recovered from the beach exhibited a fair variety. Characteristically at this site, the paste was fired brownish black in the core, to buff and moderate orange on the surface. In some ex-

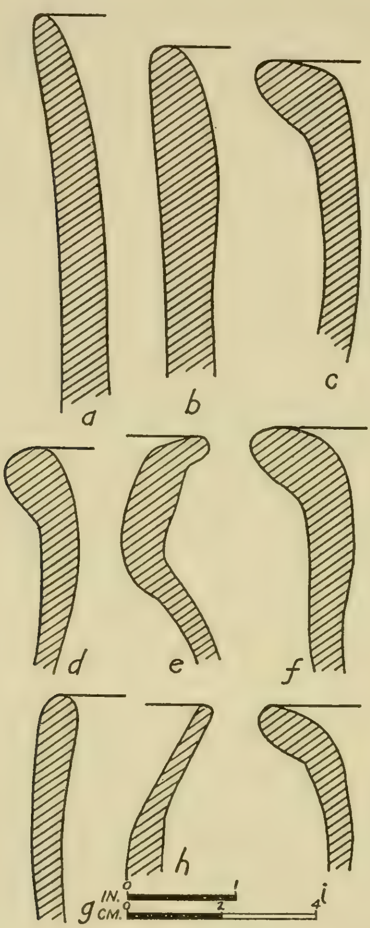

Figure 24.—Sherds from Bocas del Toro, site 3. *a*, Polished orange interior and lip, fine regular combing on exterior, band of extremely fine combing extending 2.5 cm. below lip, pl. 39, *b*; *b*, similar to "*a*" but with smooth area below lip and above fine combed area, pl. 39, *i*; *c*, buff interior and exterior, red paint on exterior of rim, interior deeply combed or impressed, grooved indentations outlining rim, 1.3 cm. from lip, pl. 30, *a*; *d*, polished orange interior and rim, exterior buff blackened by carbon and rather rough, pl. 39, *d*; *e*, dark buff blackened by carbon, smooth interior and exterior, pl. 39, *c*; *f*, same as "*c*," pl. 40, *b*; *g*, smooth buff interior, buff exterior has regular combing similar to "*a*" and "*b*," pl. 40, *c*; *h*, *i*, smooth buff interior and exterior, pls. 40, *j*, and 40, *d*, respectively.

amples, it was fired 100 percent moderate orange. In other examples the moderate orange surface is definitely due to polishing. In others (pl. 40, *d*), the orange interior over buff paste may be due to a self wash. Probably all the clay with coarse and moderate temper is the same, and the buff or orange color variations are due to firing conditions. The fine-tempered pastes (pls. 39, *a*; 40, *j*, *k*) are definitely different.

Evidently smaller vessels were normally of a globular form with rims that differed from straight to excurvate in varying degrees. Some of these were painted red.

Some excurvate rims were decorated by combing on the interior (pl. 40, *a*, *b*), but had a smooth exterior. These were buff with a medium temper.

One rim fragment had a looped handle attached to the rim (pl. 39, *g*). This piece was very coarse tempered and had a smooth orange-buff exterior and interior. It is very similar to a specimen found near Boquete, Chiriquí, and figured by Wassén (Wassén, 1949, fig. 37). Another example was found by us at Utivé, Province of Panama.

One solid tapering piece could have been a vessel support or a heavy handle (pl. 40, *i*).

A sherd of fine-paste, dusky yellowish-orange (8YR 6/6) ware, had on it the applique figure of an animal. This piece is typical Chiriquí alligator ware (pl. 39, *a*).

There was a single sherd of fine-tempered ware with a painted design. The decoration consisted of bold red and black parallel lines on a light-buff surface (pl. 40, *e*).

The only indication of the use of stone was a number of flint chips or rejects.

On the whole, the ware of Boc-3 shows a close affinity to that in Boc-1.

## JUNGLE POINT

On a heavily forested ridge back of Almirante and near Western River, we visited another site, where we conducted some excavations with unsatisfactory results. A native who had made a clearing on top of the ridge and had built a thatched hut told us he had found potsherds, a clay figurine of a woman, and some stone specimens while excavating a level place for his house. The figurine had been lost, but we obtained from him three celts, two of a fine-grained bluish-black stone and the other light gray. There was also a pestle of limestone (pl. 43, *c–f*).

We excavated in an area adjoining the house, but found only a few nondescript potsherds.

The most interesting point in connection with this site is that it demonstrates that habitation sites apparently existed occasionally on the tops of steep ridges.

## COCOS ISLAND

We visited Cocos Island, one of the larger islands in the bay, where we heard the familiar story that the natives knew of no ancient habitation sites. One man, however, had found an interesting basalt figure of Costa Rican type, which we photographed (pl. 41, *a–b*).

The figure represents a standing woman, holding her breasts in her hands, with a human head hanging on her back. The finder of the figure led us to the spot where the find had been made, but we saw no evidence of a habitation there.

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## EXPLANATION OF PLATES

### Plate 28

*a–i*, Characterized by gray to black core with margins varying from weak yellowish orange to moderate orange. Moderate coarse temper.

*a*, Punctate bowl, smooth rim. Eroded granular orange exterior. Smooth buff interior. See figure 18, *b*.

*b*, Punctate with incising. Smooth buff interior. 1.5 cm. thick. Figure 18, *g*.

*c*, Punctate with incising. Smooth interior. Exterior eroded and granular. 1.0 cm. thick. See figure 18, *j*.

*d–f, h, i*, Punctate and incised. Exterior and interior smooth orange. 0.6–1 cm. thick.

*g*, Punctate and incised, with boss. 1 cm. thick.

*j*, Buff core and surfaces. Interior and exterior smooth with indented fillet applied just below rim. 0.7 cm. thick.

*k*, Gray core, buff surfaces. Smooth exterior. Interior of rim combed. 1.0 cm. thick. See figure 18, *h*.

*l*, Buff core and surfaces. Smooth interior. Medium temper. Modeled octopus applique design. 0.8 cm. thick.

*m*, Light buff slip with fine line red painting. Finely ground temper. 0.5 cm. thick.

*n*, Very coarse buff ware. Interior granular. Fishtail applique design on exterior. 2.0 cm. thick.

*o*, Smooth light buff interior, red painted lip. See figure 18, *k*.

### Plate 29

*a*, Large rim sherd with applique porpoises. Brownish-black core, orange margins. Interior and rim, well-polished orange. Exterior shows very fine marks of smoothing implement, perhaps cornhusk or other similar leaf. Coarse to very coarse temper. 1.2 cm. thick. See figure 18, *a*.

*b*, Brownish-black core, buff margins. Polished buff interior and rim. Exterior, slightly rough, blackened by carbon. Coarse temper.

*c*, Black core, buff margins. Smooth buff interior and lip. Exterior, slightly rough. Medium temper. Lip painted red and remnants of red painted designs on exterior and interior. 1 cm. thick. See figure 18, *i*.

*d*, Black core, moderate orange to buff margins. Medium temper. Smooth light buff exterior and interior. Rim painted red, extending 2.5 cm. down exterior. 1.1 cm. thick. See figure 18, *f*.

*e*, Brownish black core, buff margins. Medium temper. Smooth light buff interior and exterior. Rim painted red. Exterior blackened by carbon. 1.1 cm. thick. See figure 18, *n*.

*f*, 80 percent brownish black core, orange to buff margins. Coarse temper. Smooth orange interior and exterior. Rectangular openings had been cut below rim. 2.0–2.5 cm. thick.

*g*, 90 percent brownish-black core and outer surface, 10 percent inner surface buff. Very coarse, heavily tempered. Granular interior. Exterior combed. 1.5 cm. thick.

*h*, Brownish-black core, buff exterior. Medium temper. Interior smooth and exterior slightly roughened.

*i*, Light buff, medium temper. Smooth exterior and interior. Interior shows narrow parallel ridges made by rubbing stone. 1.5 cm. thick.

*j*, Brownish-black core, buff margins, coarse temper. Smooth light buff interior and exterior. Red-painted rim. 1.2 cm. thick. See figure 18, *m*.

*k*, Black core, buff margins. Fine temper. Smooth buff interior and exterior. Inside of lip painted red. 0.5–0.8 cm. thick. See figure 18, *l*.

## PLATE 30

*a*, Tripod vessel. Black core, buff margins. Fine temper. Smooth buff exterior and interior. Completely coated with white dust from the limestone cave. Four groups of red perpendicular lines on the interior of rim. 0.5 cm. thick.

*b*, Tripod vessel. Some parts of bowl burned 100 percent buff, others black core and buff margins. Fine temper. Smooth buff interior. Most of exterior blackened by carbon. Body roughened by horizontal striating. Legs are smooth and decorated with horizontal red line painting. Modeled animal figure seated on top one leg. Three perpendicular slots in leg. 0.7 cm. thick.

*c*, Subglobular bowl. Black core, buff margins and surfaces. Fine temper. Exterior and interior rough.

*d*, Subglobular bowl. Black core and margins. Fine temper. Smooth buff interior and exterior.

## PLATE 31

*a*, Polished dark buff. Fine temper. Exterior and interior smooth. Edge of rim painted red. Red perpendicular line decoration on interior of rim. Strap handle shows finger marks where attached. 0.6 cm. thick. See figure 21, *e*.

*b*, Combed buff exterior. Smooth carbonized interior. Medium temper. Small nodes on the shoulder. 0.8 cm. thick.

*c*, Buff. Coarse temper. Smooth exterior. Interior pitted. Rim painted red. Strap handle. 0.7 cm. thick. See figure 21, *f*.

*d*, Buff weathered brown. Medium temper. Interior and exterior smooth. 0.6 cm. thick. See figure 21, *g*.

*e*, Buff. Fine temper. Polished interior. Carbonized exterior has roughened zone below the rim, decorated with incised lines connecting hemispherical nodes. Another roughened area runs around center of bowl. Edge of rim painted dark red. See figure 21, *a*.

*f*, Bowl with slotted pedestal base. Black core, dark buff margins. Fine temper. Base and interior of bowl, polished dark buff. Deep red slip on exterior of bowl. 0.6 cm. thick. See figure 19.

*g*, Buff paste. Medium temper. Exterior smooth but pitted by erosion. Interior eroded. Rolled everted rim, loop handle. See figure 21, *b*.

## PLATE 32

*a*, Flat base. Dark buff weathered brown. Fine temper. Exterior and interior smooth. 0.7 cm. thick.

*b*, Neck of small jar. Thin dark buff partially carbonized. Fine temper. Interior smooth. Exterior, two parallel fillets decorated with crude incising. 0.6 cm. thick.

*c*, Buff paste. Medium temper. Buff interior, partially painted red. Exterior, red on buff, with lunate punctations between double incised lines. 0.5 cm. thick.

*d*, Interior and exterior, polished dark buff weathered brown. Fine temper. Raised design.

*e*, Exterior, polished buff painted with red line designs. Smooth, unpainted buff interior. Medium temper.

*f*, Black core with buff margins. Medium temper. Polished buff interior decorated with painted red vertical lines. Lip smooth and painted red. Exterior slightly rough.

*g*, Smooth brown interior. Combed exterior, brown blackened with carbon.

*h*, Slightly roughened buff exterior. Red painted lip and red vertical lines on polished buff interior. Fine temper. 0.7 cm. thick.

*i*, Wide black core and buff margins. Fine temper. Polished buff interior. Exterior rough and carbonized. Red lip.

### PLATE 33

*a*, Brown carbonized. Medium temper. Polished interior. Smooth exterior pitted by erosion. See figure 21, *i*.

*b*, Polished dark buff interior and exterior. Medium temper. See figure 21, *d*.

*c*, Fragment of handle, frying pan incensario. Black core, buff margins. Fine temper. Well-polished buff exterior with one red transverse line. Red paint along edges. Under side, smooth buff. 1.5 cm. thick.

*d*, Concave vessel support, beveled supporting edge roughened. Smooth buff with red paint on exterior.

*e*, Polished brown interior and exterior. Medium temper. Surface eroded and carbonzied. See figure 21, *j*.

*f*, Polished buff interior and body exterior. Lip of rim painted red. Exterior of rim roughened. Medium temper. See figure 21, *h*.

### PLATE 34

*a*, Wide black core, narrow buff margins. Medium temper. Exterior, roughened buff. Interior, smooth buff. Considerable limestone dust deposited on surface. Lip painted red. Vertical ridges around middle. Indentations around collar. 0.8 cm. thick. See figure 22, *a*.

*b*, Dark buff. Medium temper. Carbonized exterior shows marks of smoothing implement. Interior smooth. 0.7 cm. See figure 22, *e*.

*c*, Smooth dark buff interior, red painted lip. Exterior carbonized and slightly roughed. Medium temper. 0.7 cm. thick. See figure 22, *b*.

*d*, Polished dark buff interior decorated with six red stripes. Red lip. Exterior badly eroded but apparently had vertical ridges around middle similar to (*a*). Medium temper. 1 cm. thick. See figures 20, *e*; 23.

*e*, Dark buff. Smooth interior and exterior. Red painted outflaring lip. 0.8 cm. thick. See figure 22, *k*.

*f*, Dark buff. Smooth interior and exterior. Red painted beveled lip. Medium temper. 1.3 cm. thick. See figure 22, *m*.

*g*, Dark buff. Smooth interior and exterior. Red painted beveled lip. 1.3 cm. thick. See figure 20, *a*.

### PLATE 35

*Large vessels with high collars.*

*a*, Dark buff polished interior, exterior roughened. Medium temper. Lip painted red. Applique octopus design. 1.3 cm. thick. See figure 22, *d*.

*b*, Dark buff polished interior. Exterior combed. Medium temper. 0.9 cm. thick. See figure 22, *f*.

*c*, Buff, exterior of collar combed. Deep groove where collar joins body. Exterior of body smooth. Interior and lip of vessel smooth. Collar 12.4 cm. high. See figure 22, *c*.

*d*, Collar and body of vessel combed buff. Smooth zone at point where collar joins body is polished brown. Interior is buff with black firing cloud. Medium temper. 0.7 cm.

*e*, Black core, buff margins. Medium temper. Polished brown interior. Exterior combed. 1 cm. thick.

*f*, Very thick black core, narrow buff margins. Combed buff exterior. Lip and interior smooth. Lip painted red. Coarse temper. 0.8 cm. thick.

## Plate 36

*Exterior of sherds shown in plate 37.*

*a,* Buff, carbonized on exterior. Deep incised groove sets off base of collar from body. Exterior shows marks of smoothing implement, such as cornhusk.
*b,* Buff, carbonized on exterior. Curving convex collar. See plate 30, *d.*
*c,* Carbonized buff ware, red lip. See figure 22, *o.*
*d,* Buff interior and exterior, fine temper. See figure 20, *g.*
*e,* Rough buff exterior, coarse paste. Red lip. See figure 22, *j.*
*f,* Exterior rough, carbonized. See figure 20, *h.*
*g,* Rough buff exterior. Red lip.
*h,* Rough buff exterior. Deep incised groove separating collar from body. See figure 22, *g.*
*i,* Rough buff exterior. Deep incised groove separating collar from body. Coarse temper. See figure 22, *h.*
*j,* Rough buff exterior. Red lip. Deep incised groove separating collar from body. Coarse temper.
*k,* Rough exterior, carbonized. Red lip. Coarse temper. See figure 22, *i.*

## Plate 37

*Interior of sherds shown in plate 36.*

*a,* Smooth buff with beveled rim on interior. Lip painted red.
*b,* Same as (*a*).
*c,* Polished buff.
*d,* Smooth buff, fine temper.
*e,* Smooth buff pitted by erosion.
*f,* Carbonized, smooth buff.
*g,* Smooth buff with red lip and broad red vertical lines painted on interior.
*h,* Polished buff, beveled rim.
*i,* Polished buff.
*j,* Smooth buff. Red lip.
*k,* Carbonized surface. Smooth buff, beveled rim.

## Plate 38

*a–d,* Conch spires with circular hole in center.
*e,* Limestone chisel.
*f,* Red jasper polishing stone.
*g,* Polished celt of blue slate.

## Plate 39

*a,* Gray core and buff margins. Fine, sparsely tempered. Dusky yellowish orange (8YR6/6) interior and exterior. Smooth exterior, rough interior. Applique animal figure. 0.7 cm. thick.
*b,* Black core, buff margins. Coarse, medium tempered. Exterior, buff with splotches of orange. Fine regular combing, with band of extremely fine combing extending 2.5 cm. below lip. Polished orange interior with fine parallel ridges indicating use of rubbing stone. See figure 24, *a.*
*c,* Dark buff paste. Fine, sparsely tempered. Dark buff, smooth exterior and interior of neck. Everted rim. Interior of body rough. See figure 24, *e.*
*d,* Buff paste, fine tempered. Exterior of body, buff blackened by carbon, rough. Rim smooth and splotched with orange. Polished orange interior. Small buff areas are interspersed with the orange. This may be thin clay wash which has fired orange. See figure 24, *d.*

*e*, Orange paste, medium temper. Smooth orange interior. Exterior decorated with punctate bosses.

*f*, 90 percent brownish black core, 10 percent buff on interior and exterior. Coarse, moderate temper. Exterior combed, buff, with applique design. Interior, granular, pitted, buff. 2.2 cm. thick.

*g*, Orange paste. Very coarse, heavily tempered. Smooth orange interior and exterior. Loop handle.

*h*, Buff, coarse moderate temper. Combed buff exterior. Granular buff interior.

*i*, Buff fired orange and brownish black near rim. Coarse, moderate temper. Smooth interior. Exterior, smooth area 3.5 cm. below lip. Fine combing below this area. 1.5 cm. thick. See figure 24, *b*.

*j*, Buff paste, coarse, moderate temper. Smooth buff exterior and interior. Applique octopus design.

*k*, Same as (*j*) except that buff exterior is roughly combed.

*l*, Paste black, with buff on surfaces. Coarse, heavily tempered. Surface, badly eroded. Applique octopus design.

### PLATE 40

*a*, Buff paste and surfaces. Medium temper. Smooth exterior with grooved indentations outlining rim, 1.3 cm. from lip. Red paint on exterior of rim. Interior of body deeply combed or impressed. See figure 24, *c*.

*b*, Same as (*a*). See figure 24, *f*.

*c*, Brownish black core, buff surfaces. Medium temper. Smooth interior. Exterior has regular combing similar to plate 39, *b*, *i*. See figure 24, *g*.

*d*, Gray core, buff exterior and interior. Fine, sparsely tempered. Smooth buff exterior and interior. Fire cloud on interior. See figure 24, *i*.

*e*, Light buff paste. Fine, sparsely tempered. Rough, buff interior. Polished buff exterior with bold dusky red and narrow black, parallel lines. 0.7 cm. thick.

*f*, Buff paste. Fine, sparsely tempered. Flakes of mica on polished buff interior. Rim and interior painted red. Exterior, smooth buff.

*g*, Buff paste. Coarse, heavily tempered. Smooth orange exterior painted red. Interior eroded, granular.

*h*, Buff paste. Medium temper. Exterior combed. Interior of rim smooth.

*i*, Buff paste. Medium temper. Smooth surfaces. Solid vessel support or heavy handle.

*j*, *k*, Gray core, buff margins. Very fine temper, micaceous particles visible on surface. Smooth buff interior and exterior.

*l*, Buff. Fine temper. Interior smooth. Exterior rough.

### PLATE 41

*a–b*, Female figure of Costa Rican type from Cocos Island, Almirante Bay.

*c*, Metate found on Cricamola River, photographed in town of Bocas del Toro.

*d*, Metate from Bastimentos Key.

### PLATE 42

*a*, One of the midden mounds on Darkland Point. This is the mound from which comes the Boc–1 material.

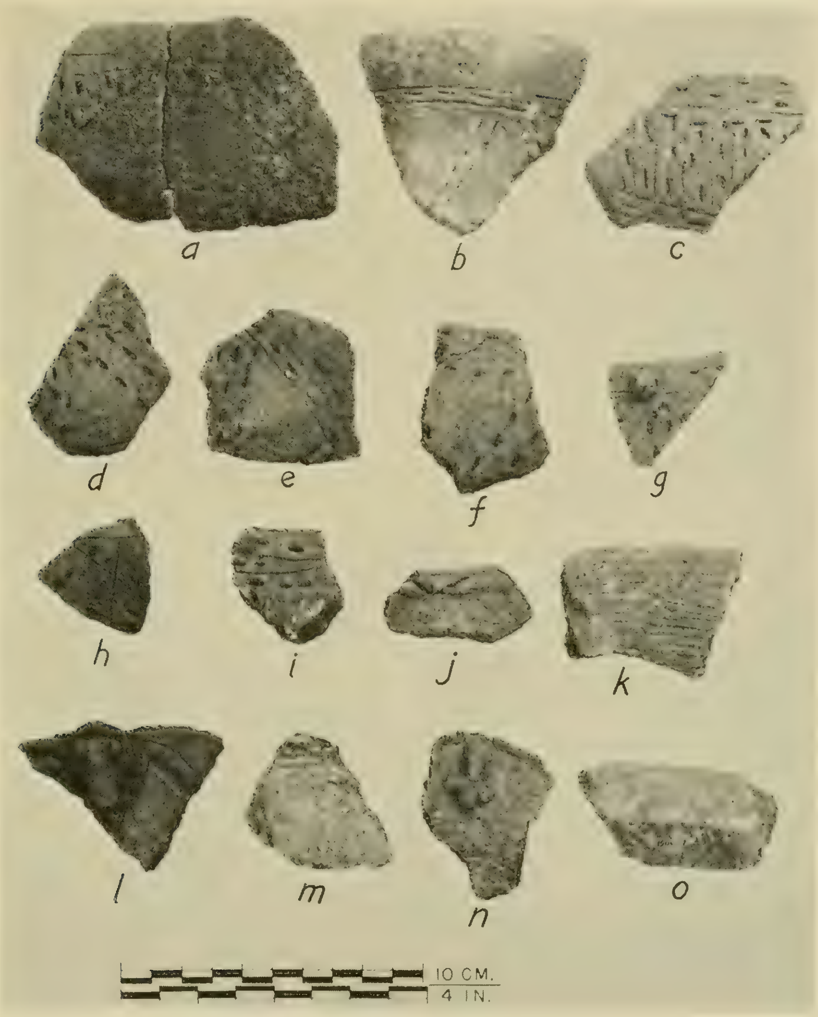
*b*, Two of four large mortars hollowed from unshaped stones on Darkland Point.

### Plate 43

*a–b,* Rings of limestone from the offshore island, Escudo de Veraguas, which was formerly a sacred place where the Guaymí made pilgrimages and held ceremonies. Engler collection. *a,* 8 cm. in diameter; *b,* 16.5 cm. in diameter.
*c–e,* Stone celts from Jungle Point.
*f,* Limestone pestle from Jungle Point.
*g–n,* Stone celts and celt fragments from cave site Boc–2. *k* is 10 cm. long.

### Plate 44

*a,* Head from jaguar effigy metate found in burial cave, Boc–2.
*b,* Head from jaguar effigy metate found on Valiente peninsula. Engler coll.
*c,* Double-bitted ax (Engler coll.) found near Almirante. This specimen is of the same material and the same size as one of two found by us in a tomb at Barriles, Chiriquí.
*d–e,* Double-bitted axes from Barriles, Chiriquí.


a
b
c
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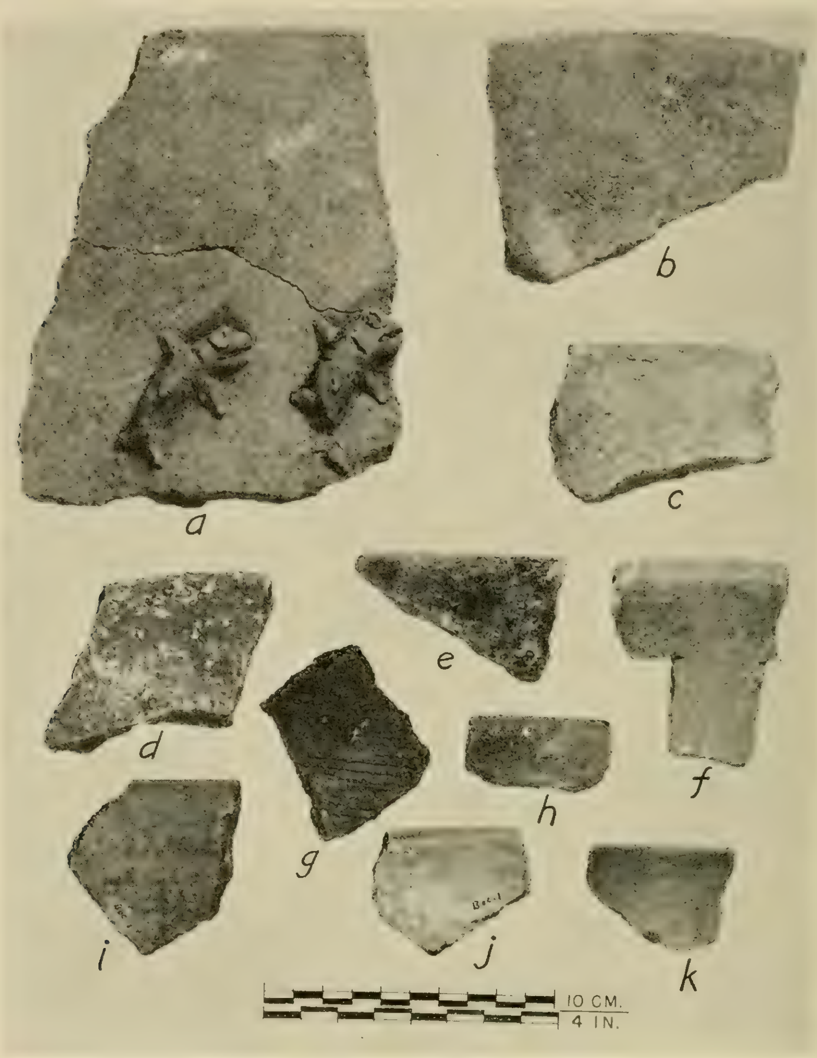
10 CM.
4 IN.

Ceramic ware from Bocas del Toro, site 1.

(For explanation ,see p. 279.)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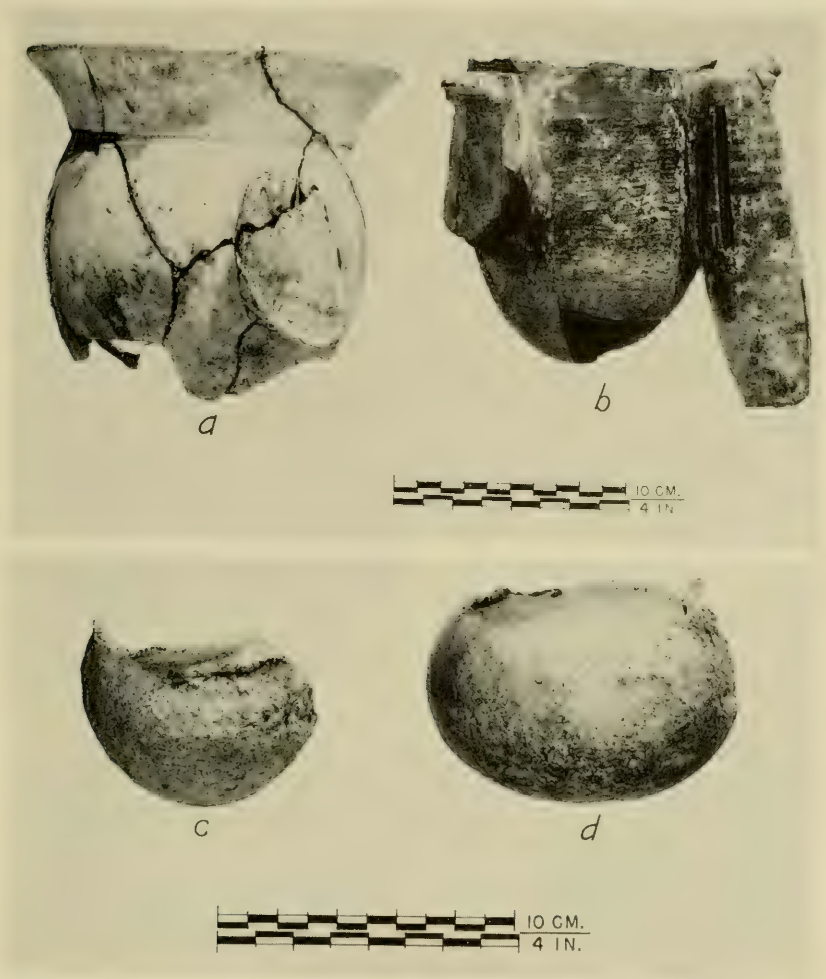
4 IN.

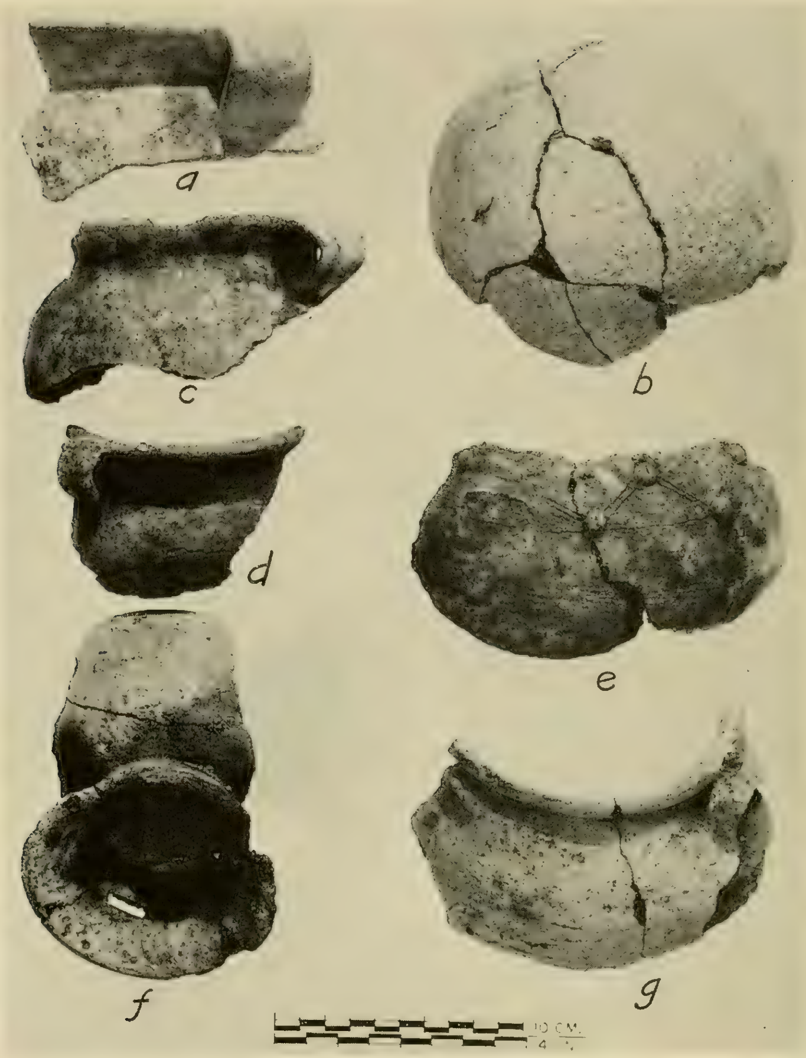
Ceramic ware from Bocas del Toro, site 1.

(For explanation, see p. 279.)


a
b
10 CM.
4 IN.
c
d
10 CM.
4 IN.

Tripod vessels and subglobular bowls from Bocas del Toro, site 2.

(For explanation, see p. 280.)


a
b
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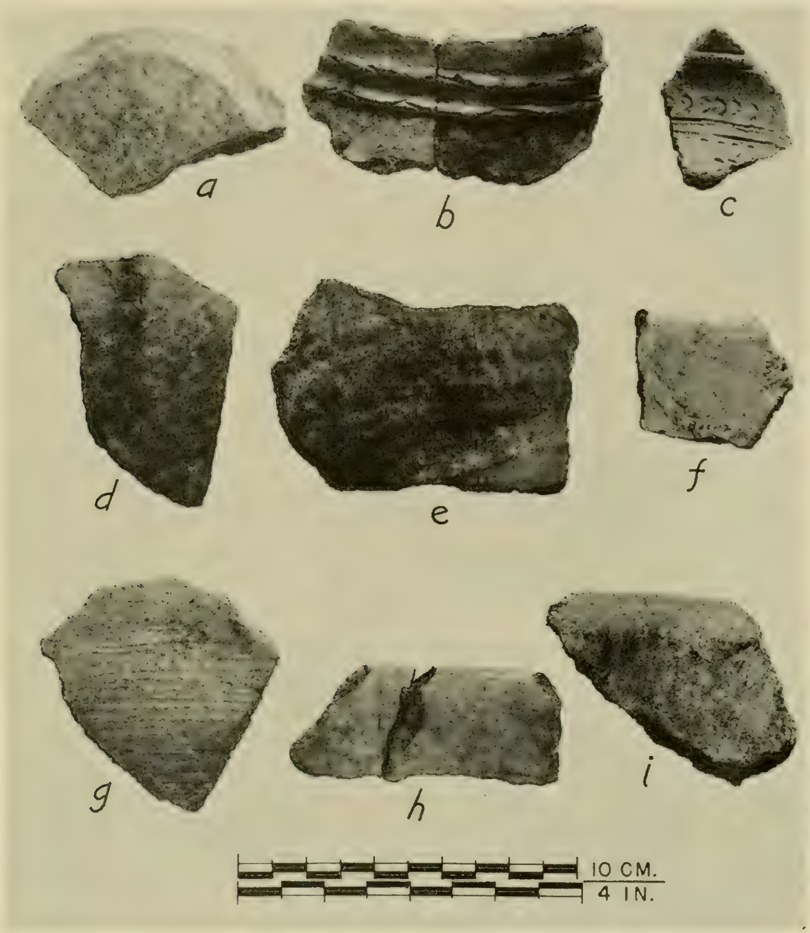
g
10 CM.
4

Ceramic ware from Bocas del Toro, site 2.

(For explanation, see p. 280.)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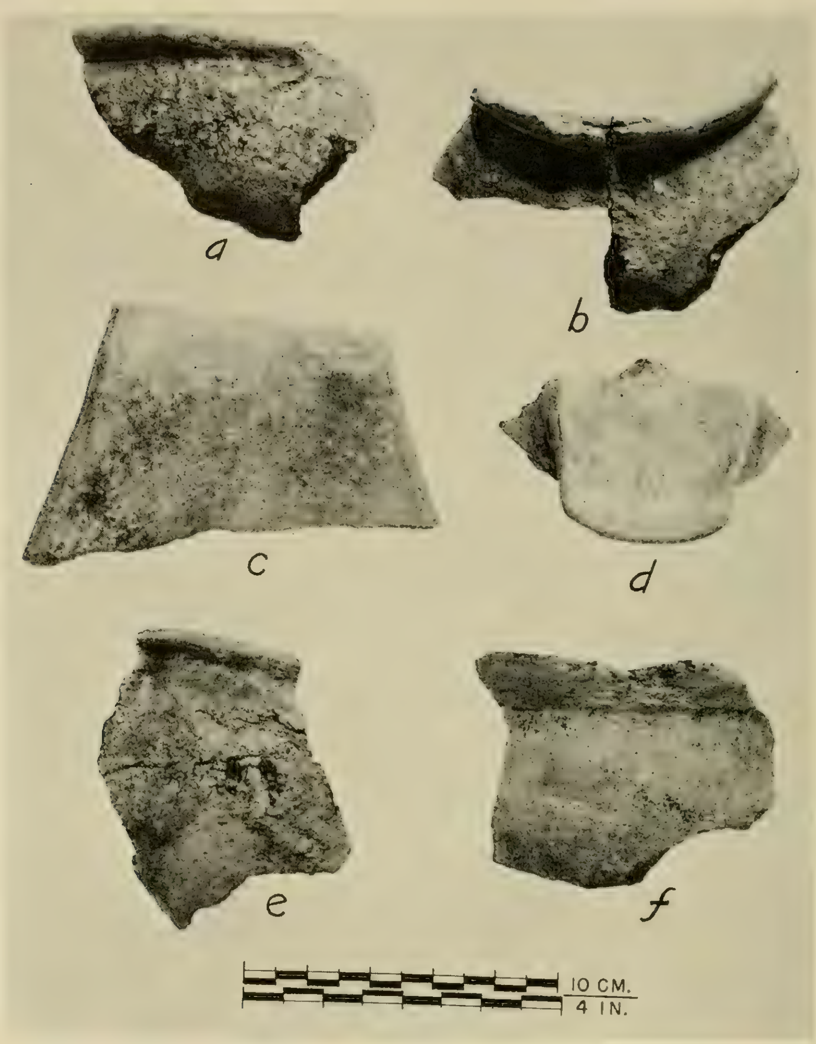
10 CM.
4 IN.

Ceramic ware from Bocas del Toro, site 2.

(For explanation, see pp. 280–281.)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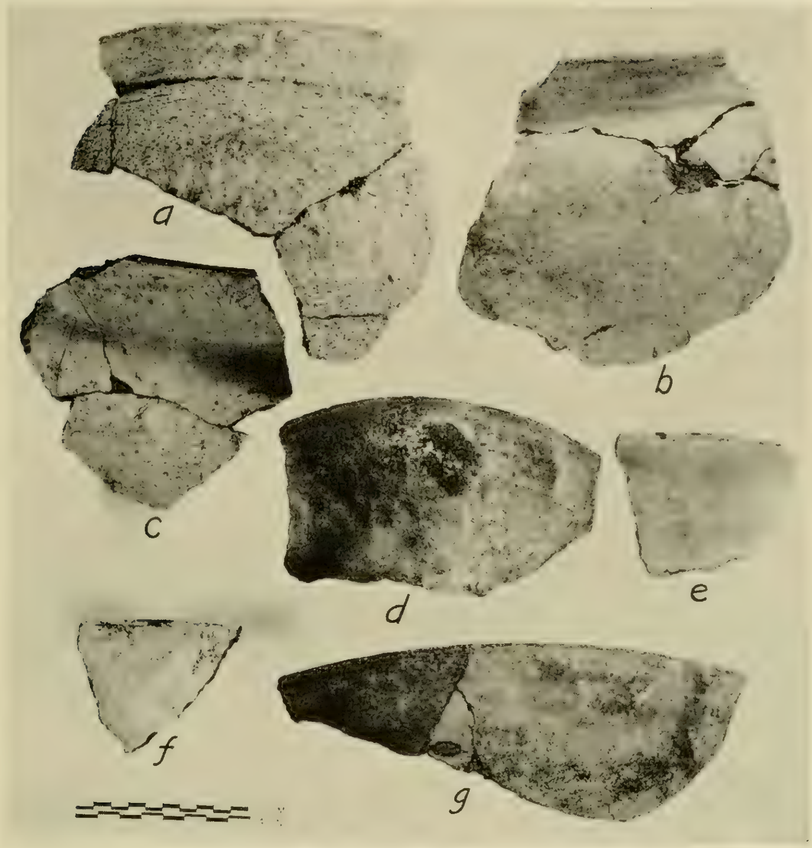
10 CM.
4 IN.

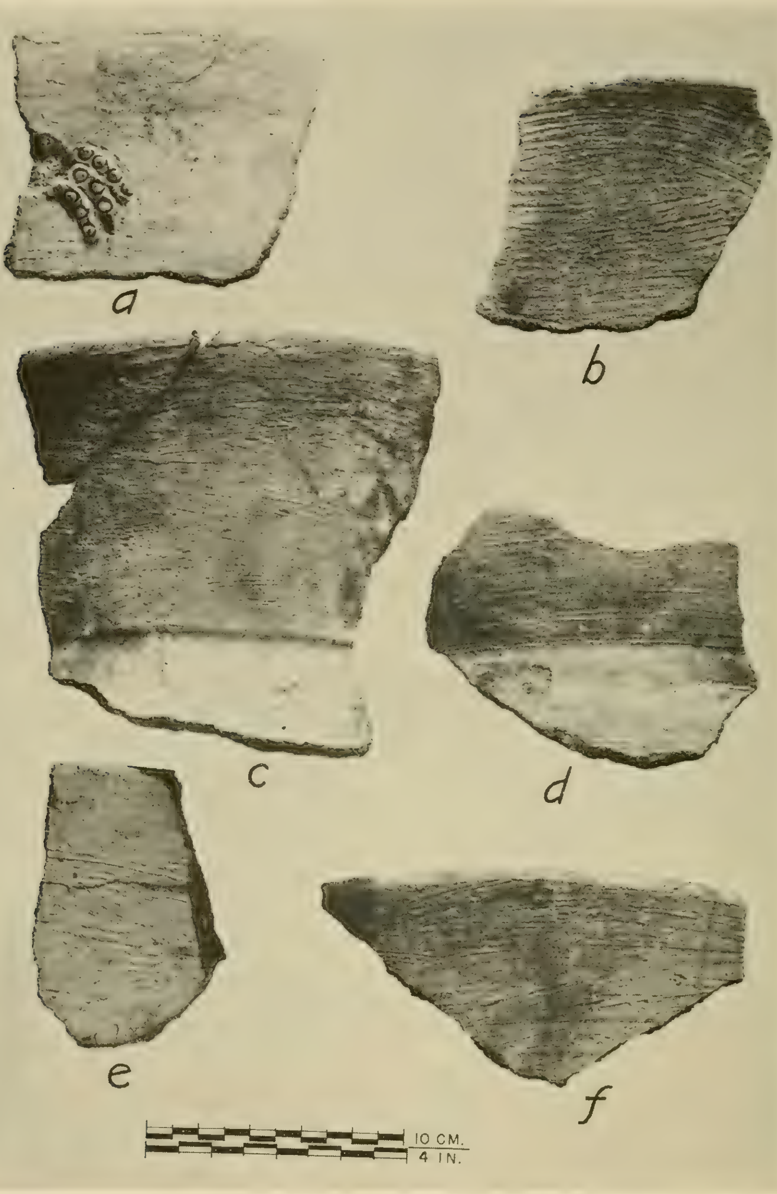
Ceramic ware from Bocas del Toro, site 2.

(For explanation, see p. 281.)



Ceramic ware from Bocas del Toro, site 2.

(For explanation, see p. 281.)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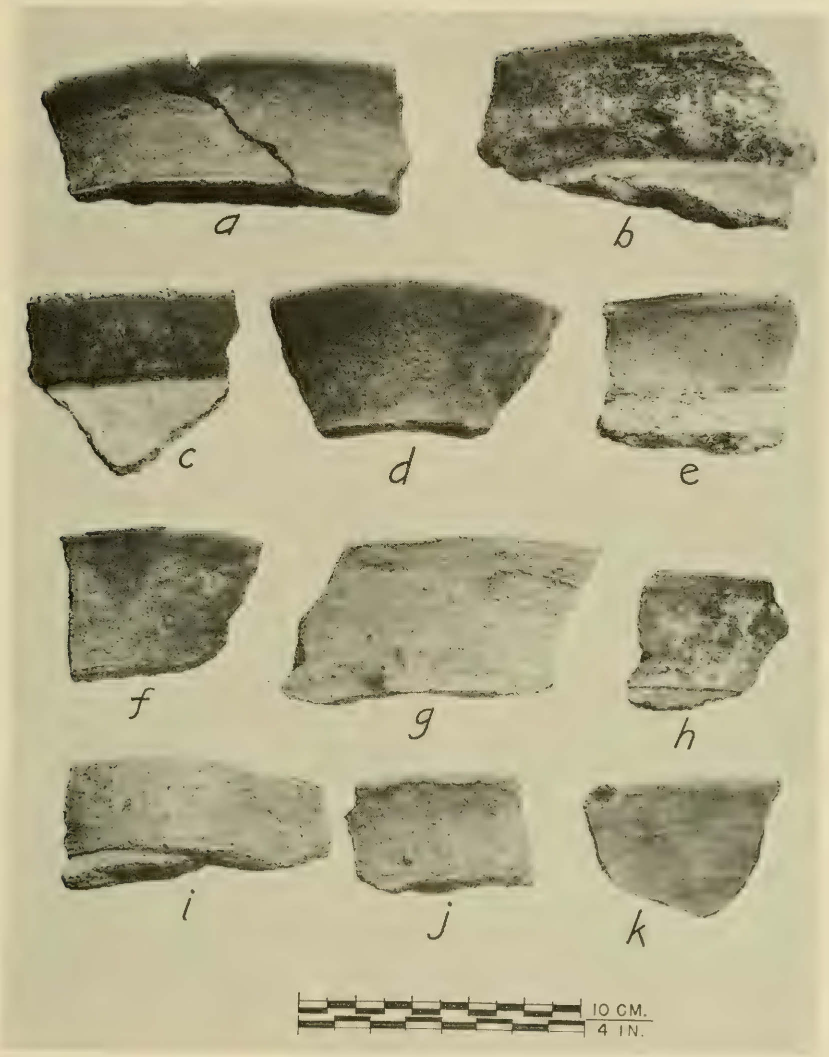
10 CM.
4 IN.

Large vessels with high collars from Bocas del Toro, site 2.

(For explanation, see p. 281.)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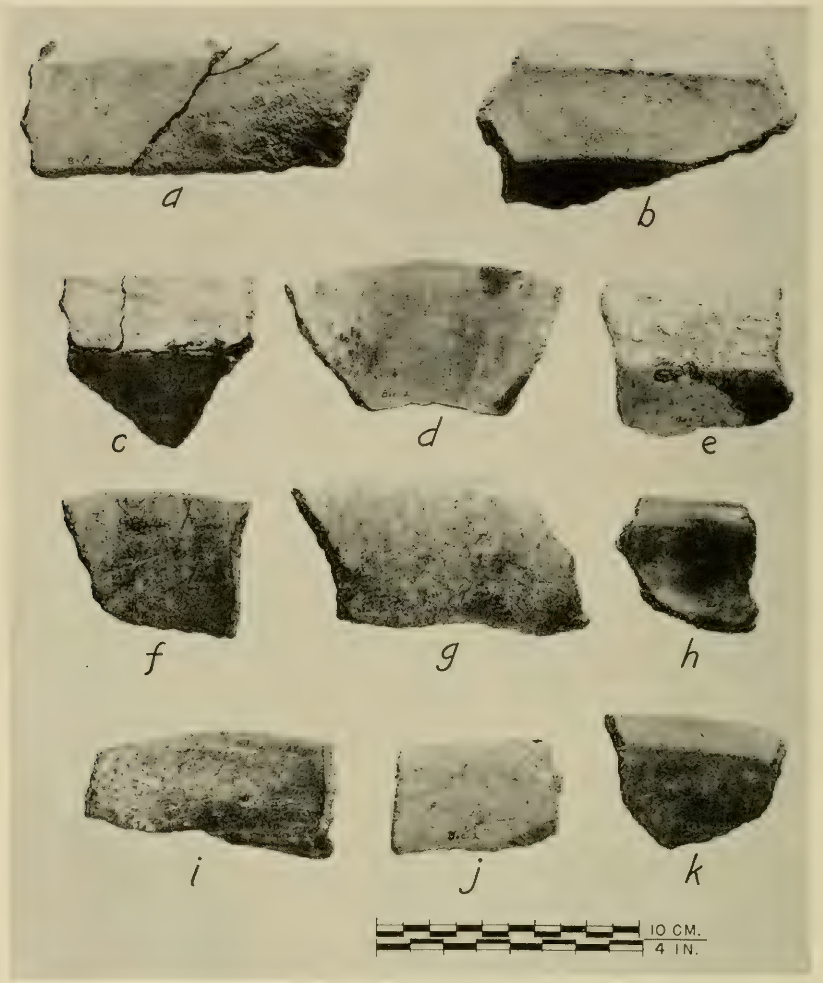
10 CM.
4 IN.

Ceramic ware exteriors from Bocas del Toro, site 2.

(For explanation, see p. 282.)


a
b
c
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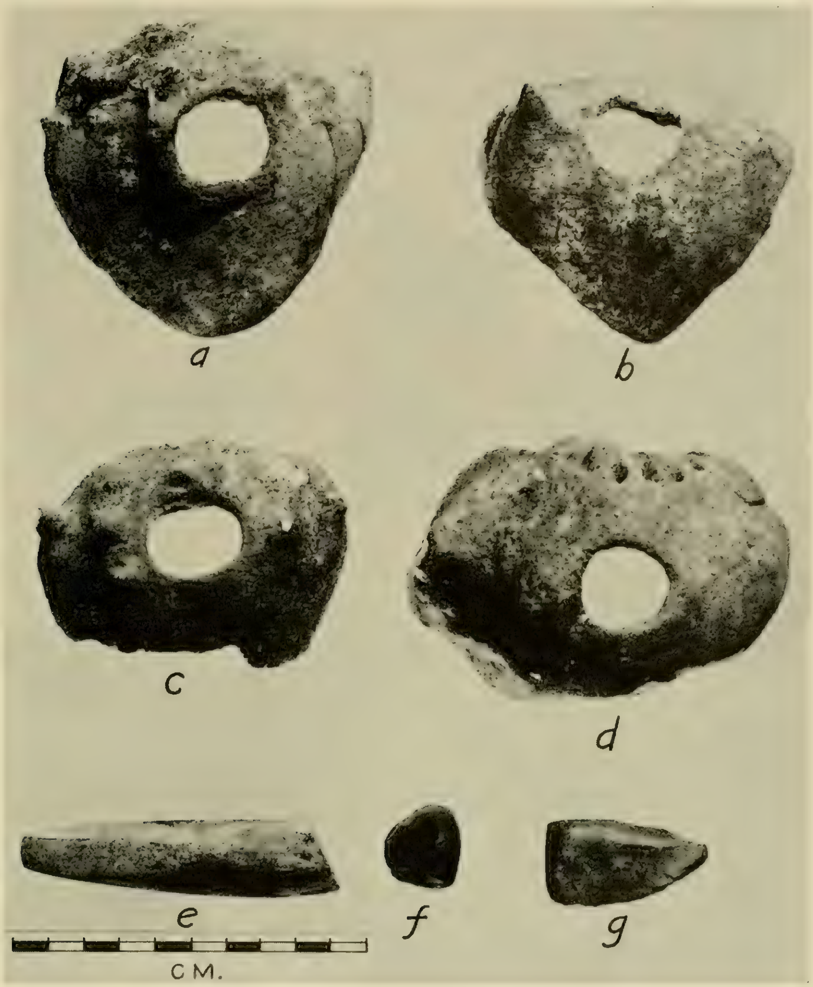
k
10 CM.
4 IN.

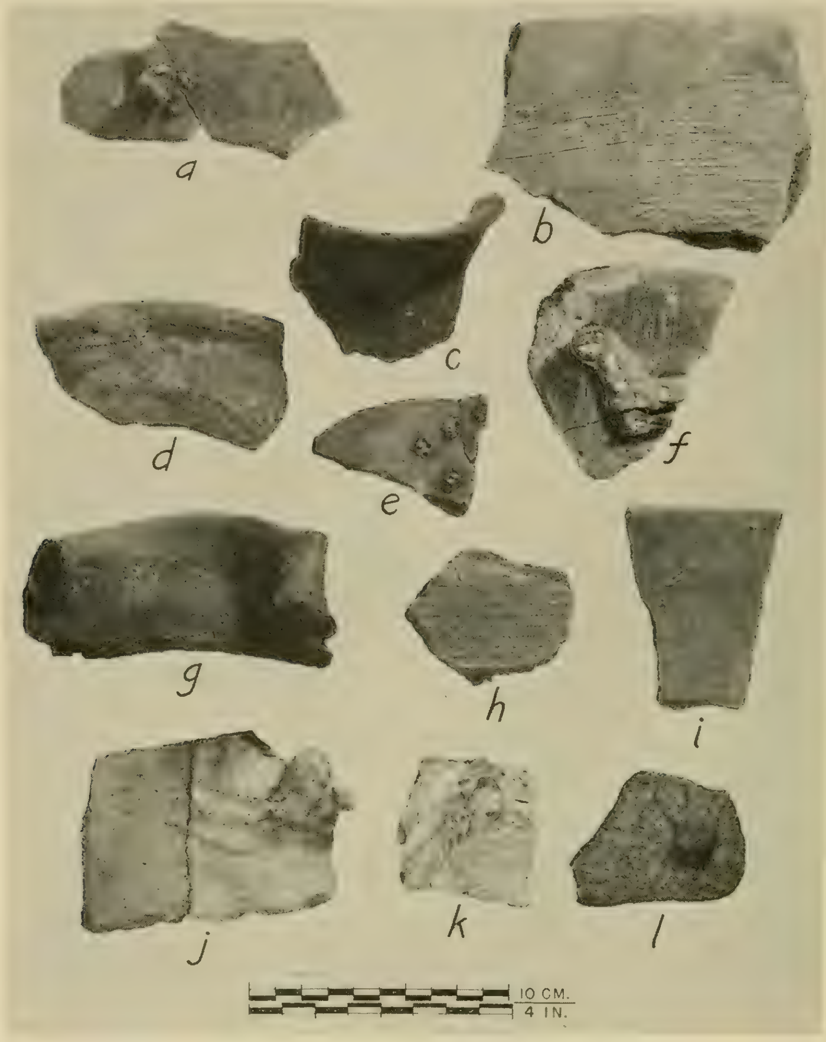
Interiors of sherds shown in plate 36.

(For explanation, see p. 282.)



Nonceramic artifacts from Bocas del Toro, site 2.

(For explanation, see p. 282.)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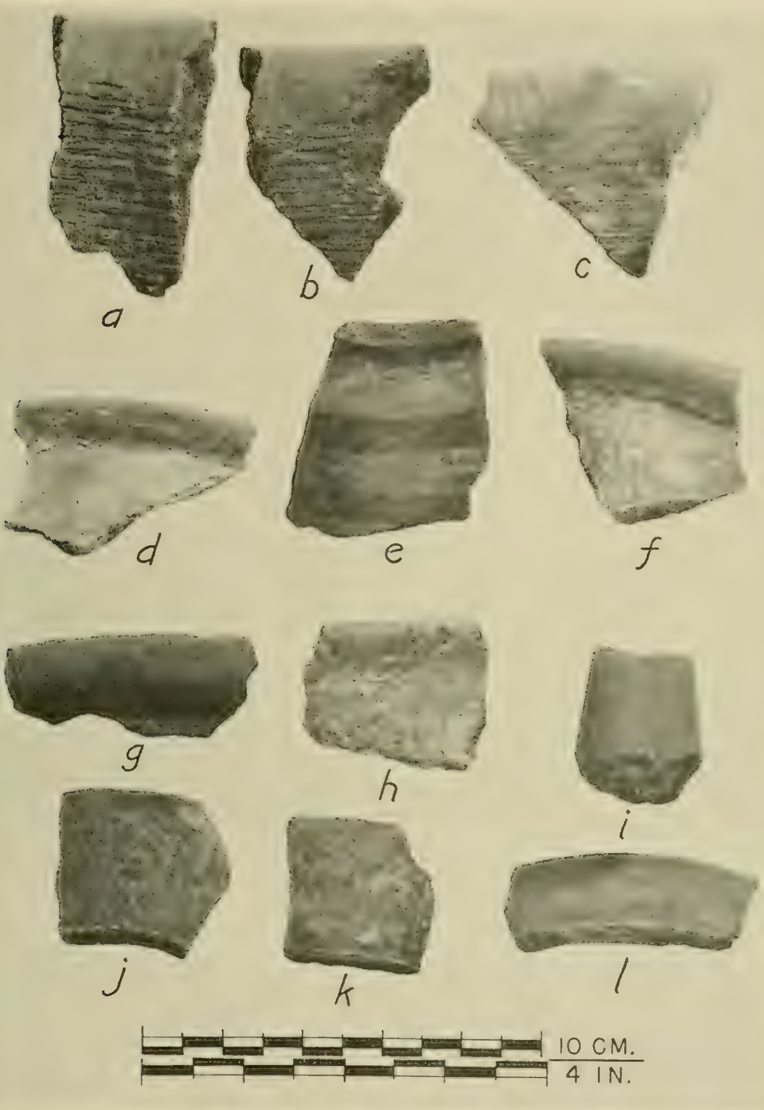
4 IN.

Ceramic ware from Bocas del Toro, site 3.

(For explanation, see pp. 282–283.)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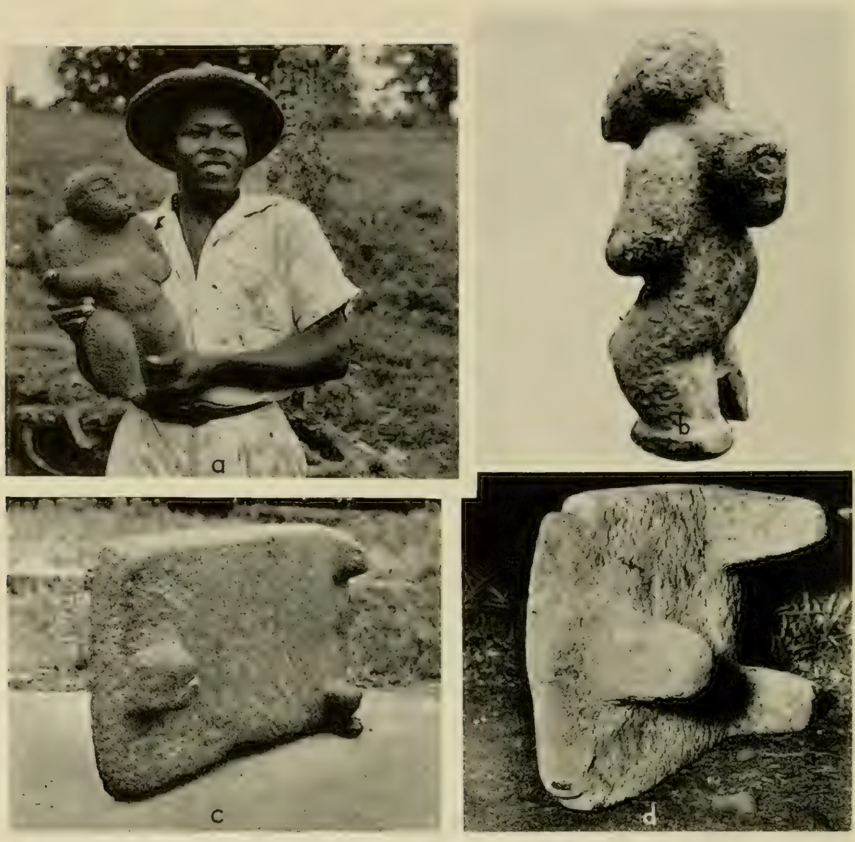
k
l
10 CM.
4 IN.

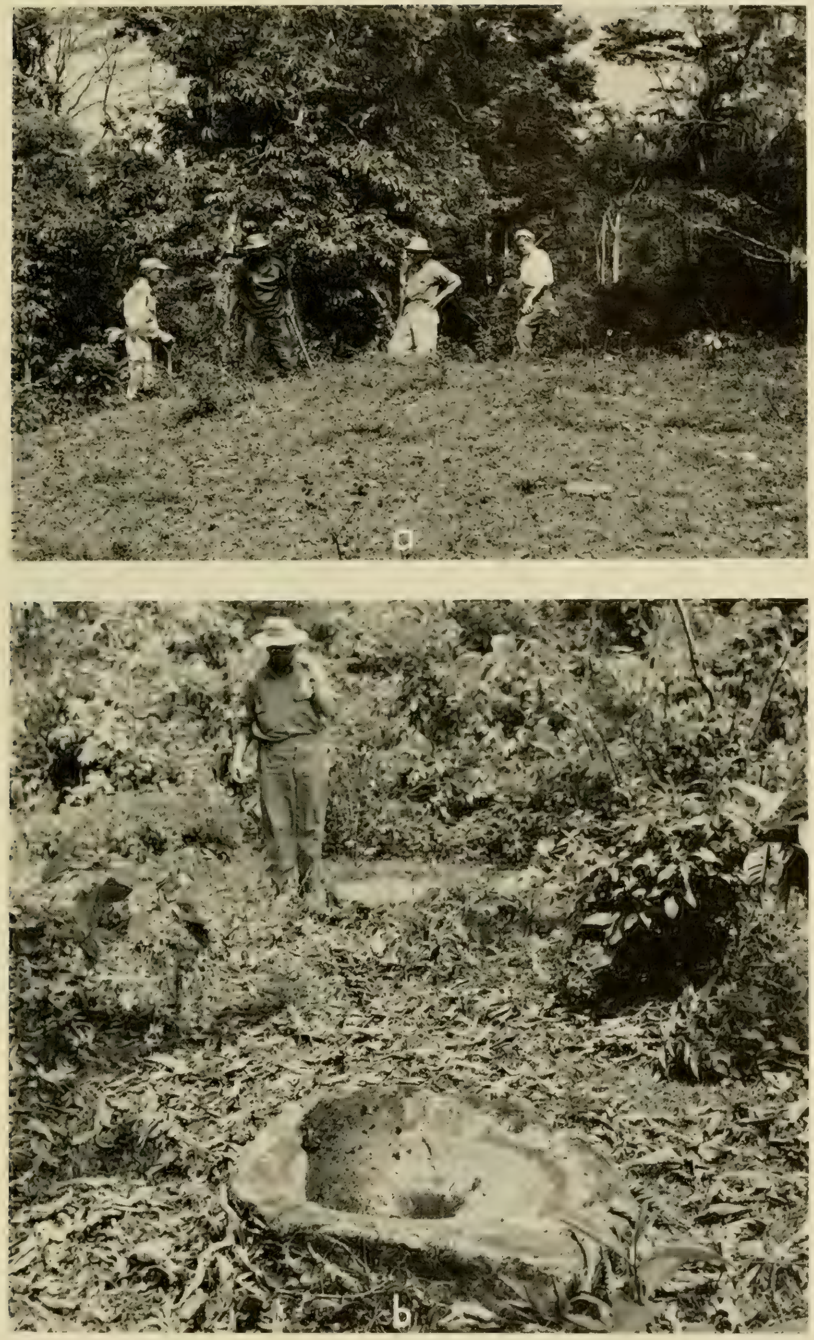
Ceramic ware from Bocas del Toro, site 3.

(For explanation, see p. 283.)



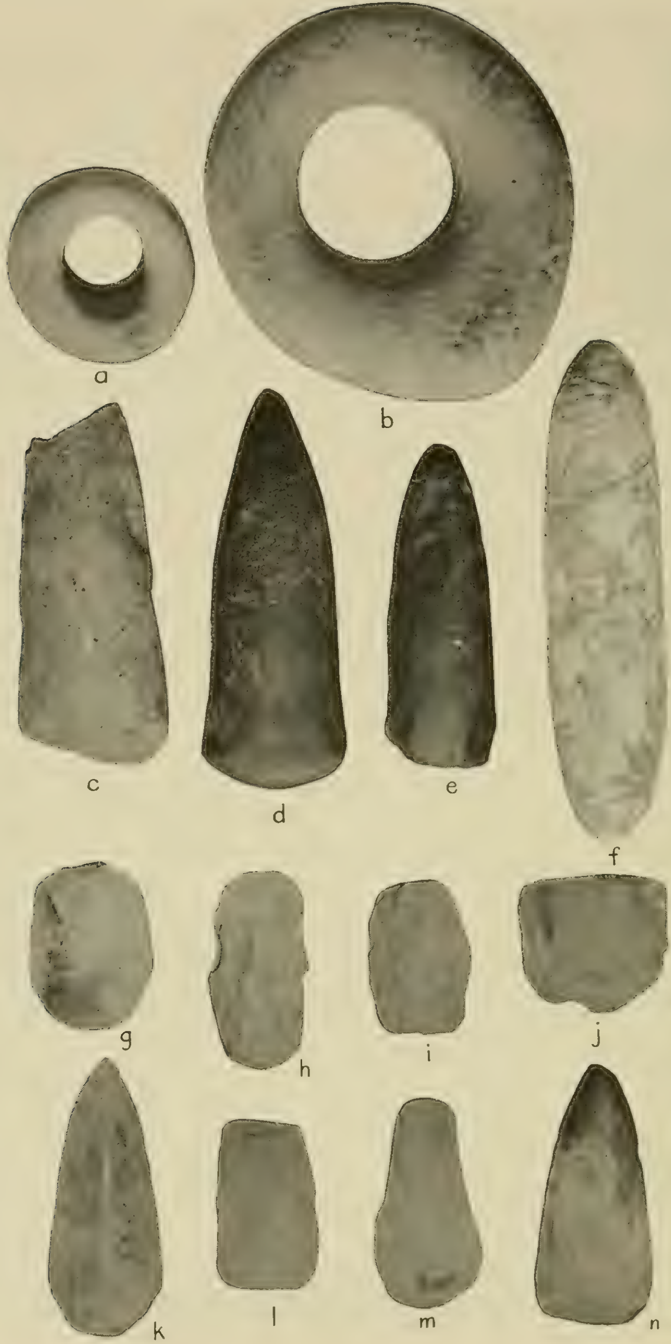
Stone female figure from Cocos Island, Almirante Bay; stone metates from Cricamola River and Bastimentos Key.

(For explanation, see p. 283.)



Midden mound and mortars, Darkland Point.

(For explanation, see p. 283.)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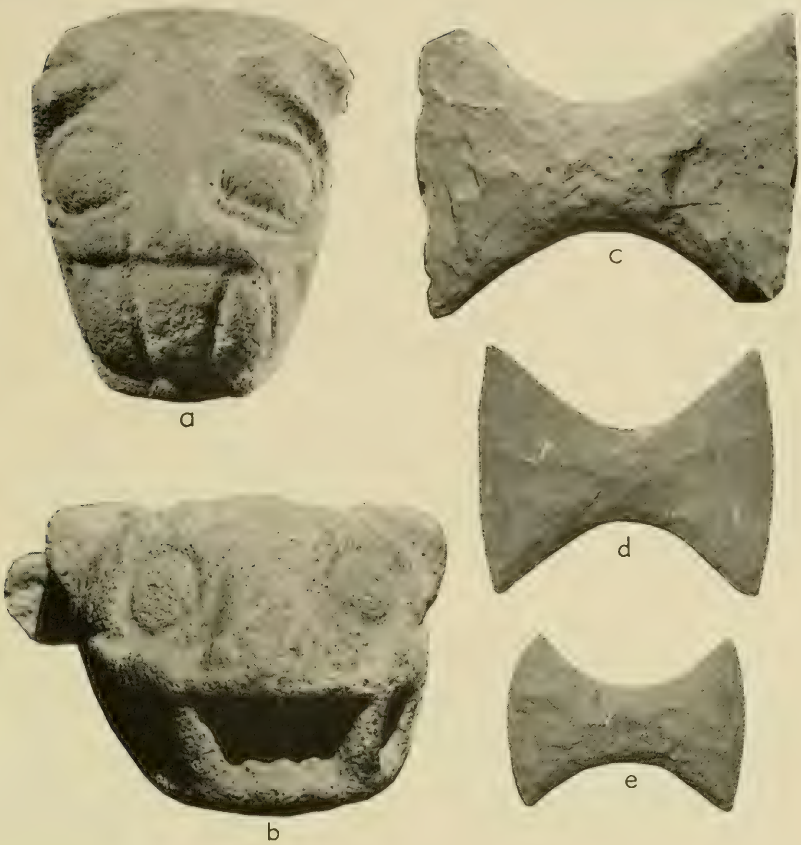
Stone artifacts from Escudo Island, Jungle Point, and Darkland Cave.

(For explanation, see p. 284.)



Jaguar heads and double-bitted axes.

(For explanation, see p. 284.)

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Bureau of American Ethnology
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Anthropological Papers, No. 73

# THE ARCHEOLOGY OF TABOGA, URABÁ, AND TABOGUILLA ISLANDS, PANAMA

By MATTHEW W. AND MARION STIRLING

682–611—64——24

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# PREFACE

The archeological investigations on Taboga, Urabá, and Taboguilla Islands were conducted in March and April of 1953 as part of the archeological program in Panama under the auspices of the Smithsonian Institution and the National Geographic Society.

Accompanying the expedition as photographer, and assisting generally in the work throughout the entire sequence of expeditions to Panama, was Richard H. Stewart, assistant chief of the Photographic Laboratory of the National Geographic Society.

We are indebted to a number of friends both in the Republic of Panama and the Canal Zone for making our work easier and more efficient. Mr. Karl Curtis, longtime resident of the Canal Zone, gave unstintingly of his time and knowledge of Panamanian archeological sites. Mr. and Mrs. Paul A. Bentz kindly allowed us to use the large basement of their home in Balboa for the storage of our specimens and as a work laboratory. Above all, we are obligated to Dr. Alejandro Méndez, director of the Museo Nacional de Panamá, for his cordial cooperation and assistance during all of our archeological investigations in Panama. Others, too numerous to mention, gave us assistance in many ways and contributed to making our stay in Panama a very pleasant one.

We are grateful to Mr. Edward G. Schumacher, artist for the Bureau of American Ethnology, for the line drawings in this report.

# THE ARCHEOLOGY OF TABOGA, URABÁ, AND TABOGUILLA ISLANDS, PANAMA

By Matthew W. and Marion Stirling

## INTRODUCTION

The islands of Taboga, Urabá, and Taboguilla lie in the Gulf of Panama some 12 miles from the Pacific entrance to the Panama Canal. All three are relatively steep mountain peaks which project above the waters of the gulf and, as a consequence, there is a minimum of level ground on them. Urabá and Taboguilla lack fresh water during the dry season, and as a result have at the present time no permanent inhabitants. Urabá is small and rocky and has very little cultivable ground. Taboguilla is larger and has a considerable area suitable for cultivation and some springs which furnish enough water for drinking purposes for all but 2 months of the year. At the present time there are three or four small houses on Taboguilla which are occupied temporarily by families from Taboga who have plantations on the island.

## TABOGA ISLAND

Taboga, about 2 miles in length and 1 mile in width, is the largest of the three islands and the only one with permanent habitations. There is an ample supply of water and a small but good harbor with good anchorage. It is a very attractive place and now is famed as a pleasure resort.

The area of the Bay of Panama extending from Taboga to the Pearl Islands is one of the world's finest fishing grounds, a fact no doubt exploited by the aboriginal inhabitants. In fact, the name "Panama" refers to the abundance of fish. Fishing now is the principal industry of Taboga as it probably was in pre-Columbian times. Judging from the nature of the archeological sites, the aborigines made considerable use of the shellfish which occur in abundance and considerable variety. The principal species used was *Aequipecten circularis* Sowerby, which constitutes probably one-half of the total shell content of the midden deposits.

Because of the lack of suitable anchorages along the mainland of the Isthmus, and because good water was not readily available there, Taboga early became a key point for the trans-Isthmian traffic. Balboa scarcely had reached the Pacific before Taboga began a colorful history matched by few spots of equal size in the New World.

The principal stream of water on Taboga flows through the only relatively level area on the island, that lying immediately back of the cove and beach. The present village occupies this area on both sides of the stream, the houses being built about as close together as possible. Since this is the only logical living site on the island, it was here also that the principal aboriginal settlement was located. Under the present village lie the remains of the old colonial Spanish town, and below that the midden deposits of the Indians. A cross section of this deposit is exposed where the ramp from the beach ascends to the first narrow street on the village level. The church appears to be built over approximately the middle of the Indian village site. While this site would be naturally the most productive location for archeological research, it is impracticable to dig in it because of the buildings which cover it. At the present time the surface of the ground under and around the houses is littered with a mixture of Spanish and Indian sherds.

Information concerning the Indians inhabiting Taboga at the time of the Conquest is almost nonexistent. Because of the early settlement of the island by the Spaniards and its limited area, it is probable that the bulk of the natives were killed or driven away early in the 16th century.

After raiding Parita and the Azuero Peninsula in 1515, Badajoz and his surviving followers fled to Chamé and thence to Taboga Island, being the first Europeans to land there. After nursing their wounds for several weeks in the security of the island, they returned to the mainland. Beyond the fact that the island received its name from Taboga, the chief who resided there, and that the Spaniards obtained 22,000 pesos of gold from the natives, we learn nothing from the early chronicles. It is probably safe to assume, however, that Badajoz obtained the gold by force and that his visit virtually brought to an end the aboriginal occupation of the island.

In 1519 Pedrarias, then Governor of Panama, after taking possession of the south coast, brought his force of 400 men to Taboga, from whence he established the old City of Panama. It is to be presumed that the Spaniards already had a settlement on the island, for in November of 1524 Pizarro sailed from Taboga on his epoch-making voyage of discovery which led to the conquest of Peru.

In 1545, Pedro de Hinojosa, dispatched by Pizarro to capture Panama and place it under his control, outfitted and repaired his ships at Taboga from whence he conducted his negotiations with the governing officials on the mainland. During all of this time there is no mention of Indians on the island.

In 1575 Dr. Alonso Criado de Castilla stated that "Five leagues from the City of Panama was the island of Otoque, and three leagues from Panama was the island of Taboga; both tilled and cultivated by some inhabitants of Panama who planted and harvested corn." This would seem to indicate that the aboriginal population had been replaced in the main by mestizos and Spaniards.

In 1610, in reply to queries sent out by the Spanish Crown, the following item is of interest:

> The districts about Panama formerly had many pueblos of Indians, but only three remained. That of Chepo was eight leagues to the east . . . . Chepo had 40 Indian inhabitants, ruled by their own governor, constable, and two mandadores.
>
> On Isla del Rey [in the Pearl Islands] to the east, 18 leagues from Panama and 6 leagues from Tierra Firma was another pueblo which usually contained 500 Indians but then only 12. The third village of natives was on Isla Taboya [Taboga] 4 leagues south of the City with but 12 inhabitants, who were very poor like those of del Rey. None of these Indians paid tribute, and all spoke the Spanish language, having entirely forgotten their own. [Anderson, 1938, p. 281.]

Reference to this pathetic remnant is the last contemporary mention of the Taboga natives. It is certain that the Indians had no part in the hectic events that took place on and about Taboga during the next two centuries when it was a key point in the activities of the buccaneers and other freebooters who roamed the South Sea and repeatedly burned and sacked the town, which was always promptly rebuilt on the same spot beside the clear stream which here flows into the cove.

In 1671, when Morgan sacked Old Panama, the Spanish refugees fled by boat to Taboga and Taboguilla. It was not long after this that Captain Searles was sent to capture the Spanish treasure ship *Trinity*; he captured it at Taboga. The ship was poorly equipped for defense, but Taboga was stored with "several sorts of rich wines" with which Searles' men "plentifully debauched themselves." By the time they had sobered up, the *Trinity* had escaped.

Even as late as 1819 Captain Illingsworth and his group of Chileans landed on Taboga, where they looted and burned the village.

A number of early descriptions of the island have been left us by the more literate of the buccaneers. That of Capt. William Dampier, written in 1685, would serve very well to describe the Island today:

> The 24th day we run over to the Island Tabago. Tabago is in the Bay, and about 6 Leagues South of Panama. It is about 3 mile long, and 2 broad, a high mountainous Island. On the north side it declines with a gentle descent to the Sea. The Land by the Sea is of a black Mold and deep; but towards the top of the Mountain it is strong and dry. The North side of this Island makes a

> very pleasant shew, it seems to be a Garden of Fruit inclosed with many high trees; the chiefest Fruits are Plantains and Bonano's. They thrive very well from the foot to the middle of it; but those near the top are but small, as wanting moisture. Close by the Sea there are many Coco-Nut-Trees, which make a very pleasant sight. Within the Coco-Nut-Trees there grow many Mammet (Mamé) Trees . . . . The S.W. end of the Island hath never been cleared, but is full of Firewood, and Trees of divers sorts. There is a very fine small Brook of fresh Water, that springs out of the side of the Mountain, and gliding through the Grove of Fruit trees, falls into the Sea on the North side. There was a small Town standing by the Sea, with a Church at one end, but now the biggest part of it is destroyed by the Privateers. The buccaneers under Sawkins lay here from May 2–15, 1680.[1] There is good anchoring right against the Town, about a mile from the shoar, where you may have 16 or 18 fathom Water, soft oazy ground. There is a small Island close by the N.W. end of this called Tabogilla [actually Urabá], with a small Channel to pass between. There is another woody Island about a mile on the N.E. side of Tabago, and a good Channel between them: this Island [Taboguilla] hath no Name that ever I heard. [Dampier, 1717.]

It is clear from the rather abundant literature concerning Taboga, that from earliest times, together with Taboguilla and Otoque, it was the vegetable garden and fruit orchard first for Old Panama, and later to a lesser extent for the modern city.

It is interesting to note the apparent changes over the centuries in the character of the crops raised. In 1575, the principal crop was corn. In 1685 Dampier states that the chief crop was plantains and bananas, but also mentions coconuts and mames. At the present time the principal crops are pineapples and papayas, which are grown in clearings on the steep hillsides. The pineapples of Taboga are famous for their quality, and it is local tradition that the original plantings for the Hawaiian Islands came from here.

The aboriginal occupants of Taboga were probably moderately prosperous, since Badajoz looted them of a fairly substantial quantity of gold. A few years ago, our workmen told us, a gold "Corona," a plain band of gold about 1 inch in width, to be worn around the head, was washed out of the bank of the creek. The finders divided it equally among themselves by breaking it into three parts. Lothrop illustrates several gold specimens said to have come from Taboga.

With the aid of natives we were able to locate several midden sites other than that underlying the village.

### TABOGA–1

Near the northeastern extremity of Taboga is a small cove, back of which is located the station from which is operated a radar installation on the summit of the island. Above the station, at an elevation of about 350 feet, the ground levels off somewhat at a point where an ephemeral stream runs during the wet season. On this area grow a number of mango and lime trees and a few coconut palms.

---

[1] "While we were here," says Ringrose (1684), "some of our men being drunk on shore, happened to set fire unto one of the Houses, the which consumed twelve houses more before any could get ashoar to quench it."

Taboga–1 is a midden deposit consisting of a mixture of shells and black earth and covering an area approximately 100 feet in diameter on the south slope of a shallow dry ravine. About 6 inches of black soil covered the midden deposit. Under this the shell layer decreased in depth from 36 inches at the north, or lower, end to 24 inches at the south end. Under the shell the natural base was a very hard packed mixture of rough rocks and clayey soil. We dug a test trench into this base to a depth of 2 feet without finding any artifacts. Trench 1 was laid out 20 feet × 20 feet and excavated in four sections each 5 feet × 20 feet in dimension. The material was removed in 1-foot layers 0–12 inches, 12–24 inches, and 24–36 inches.

### STONE, BONE, AND SHELL

Although potsherds were fairly abundant through the deposit and stone artifacts were moderately common, there were no artifacts of shell or bone. Shells were abundant and in considerable variety, 33 species being collected. It is interesting to note that the specimens from the midden average a considerably larger size than the same species living in these waters today.

The following were found in Taboga 1:[2]

Gastropoda
- *Tegula* (*Tegula*) *pellis-serpentis* Wood
- *Nerita* (*Ritena*) *scabricosta* Lamarck
- *Cypraea* (*Macrocypraea cervinetto*) Kiener
- *Planaxis planicostatus* Sowerby
- *Strombus peruvianus* Swainson
- *Strombus gracilior* Sowerby
- *Strombus granulatus* Swainson
- *Malea ringens* Swainson
- *Thais* (*Vasula*) *melones* Duclos
- *Muricanthus radix* Gmelin
- *Muricanthus nigritus* Philippi
- *Turbinella castanea* Reeve
- *Fasciolaria* (*Pleuroploca*) *princeps* Sowerby
- *Fasciolaria* (*Pleuroploca*) *salmo* Wood
- *Melongena patula* Broderip and Sowerby
- *Mitra* (*? Strigatella*) *belcheri* Hinds
- *Vasum caestus* Broderip
- *Terebra* sp. (worn)
- *Terebra* (*Strioterebrum*) *glauca* Hinds

---

[2] The identifications were made by Dr. R. Tucker Abbott. Nomenclature follows that of A. M. Keen (1958).

PELECYPODA
- *Codakia distinguenda* Tryon
- *Arca pacifica* Sowerby
- *Anadara (Larkinia) grandis* Broderip and Sowerby
- *Anadara (Anadara) formosa* Sowerby
- *Aequipecten (Plagioctenium) circularis* Sowerby
- *Lyropecten (Lyropecten) subnodosus* Sowerby
- *Ostrea chilensis* Philippi
- *Chama frondosa* Broderip
- *Trachycardium (Trachycardium) consors* Sowerby
- *Periglypta multicostata* Sowerby
- *Chione (Chione) californiensis* Broderip
- *Protothaca grata* Say
- *Megapitaria aurantiaca* Sowerby

BARNACLE: *Tetraclita squamosa panamensis* Pilsbry

Fish bones were present in some quantity, but were not as abundant as might have been expected. The most common shellfish was *Aequipecten circularis*, which constituted approximately one-half of the total number. No mammal or bird bones were recovered.

The most abundant stone artifacts consisted of round polishing stones, hammerstones and manos, or grinding stones, all adapted from naturally shaped beach stones. One broken metate leg was found in layer 0–12 inches. Three rather crude, blunt stone celts were found, two in layer 0–12 inches, one in 12–24 inches. The manos were of no standard shape, but generally short rather than long, and somewhat flat in cross section. The polishing stones and hammerstones varied in size from that of a golf ball to somewhat larger than a baseball. In the 12–24 inch level was an interesting graver made from a lamellar flake of yellow flint.

Since the concentration of midden material seemed to increase toward the northeast corner of trench 1 we laid out trench 2, 25×25 feet parallel to trench 1, and just to the northeast of it. Over a portion of this area was a stone rectangle, 19 feet square, which lay on the surface, possibly a house foundation. Some of the stones weighed from 200 to 300 pounds each.

In trench 2, the midden layer varied from 32 inches in thickness along the west wall to 24 inches on the east wall. We carried the excavation to an actual depth of 44 inches, finding the base material to be the same as in trench 1. We could find no traces of a floor or structure under the stone "foundation."

In general, the contents of the midden were similar to those in trench 1, but stone objects were somewhat more abundant. In the 0–12 inch level we found two legless metates; one rectangular, the other oval. The latter had been worn so thin that a hole had formed in the bottom. In this level was also a small but well polished celt with a sharp cutting edge, a number of hammerstones and manos made from beach stones, and a yellow flint arrowhead of the rough prismatic form characteristic of Veraguas and Coclé sites (pls. 51, 52).

In the 12–24 inch level was another oval legless metate, and two peculiar well-made large polished stone "axes" of an oval shape. In this level there was also an interesting carved stone bird effigy 7.5 cm. long (pl. 51), and a second large prismatic flint arrowhead. Near this was a deposit consisting of several hundred unworked sharks' teeth.

### CERAMICS

The potsherds were broken into relatively small fragments in both trenches, and not a single complete vessel was found. In trench 2 at a depth of 20 inches was a small red-painted subglobular jar, broken into many pieces but almost complete.

Typical pottery forms are globular and subglobular bowls with restricted orifices, hemispherical bowls, and olla shapes with outflaring rims or collared necks. More elaborate vessels were pedestal and ring base bowls. Some of the pedestal bases are short and squat, others tall and slender.

The pedestal bowls were typically decorated with black and white designs on an orange base. The designs were sometimes on the exterior, sometimes on the interior of the bowls. Frequently, red paint alone was used on the interior, the exterior, or both. Often it was applied only to the lip or the neck of the vessel. Simple designs in black were sometimes put on the red base.

There were two types of red paint used; one a true dark red, the other an orange which varied in tone from yellowish to red. The two shades occasionally were applied on the same vessel to give a contrasting design.

Sometimes white or cream was used as a base, with designs in red or orange. In at least one instance the orange designs were outlined with narrow black lines.

Modeled designs were infrequent. Some subglobular bowls were decorated with curving, parallel, raised ridges impressed with scallop shells. These vessels had horizontal loop handles. Sherds from two plain red bowls of thin hard ware were decorated with rows of raised bosses. Incising was rather common and was usually in connection with zoned designs. Punctate decorations were almost invariably of the zoned variety.

Large ollas often were decorated with brushing or scallop combing, especially on the necks. The best idea of the pottery and decorative techniques can be obtained from the illustrations and plate descriptions.

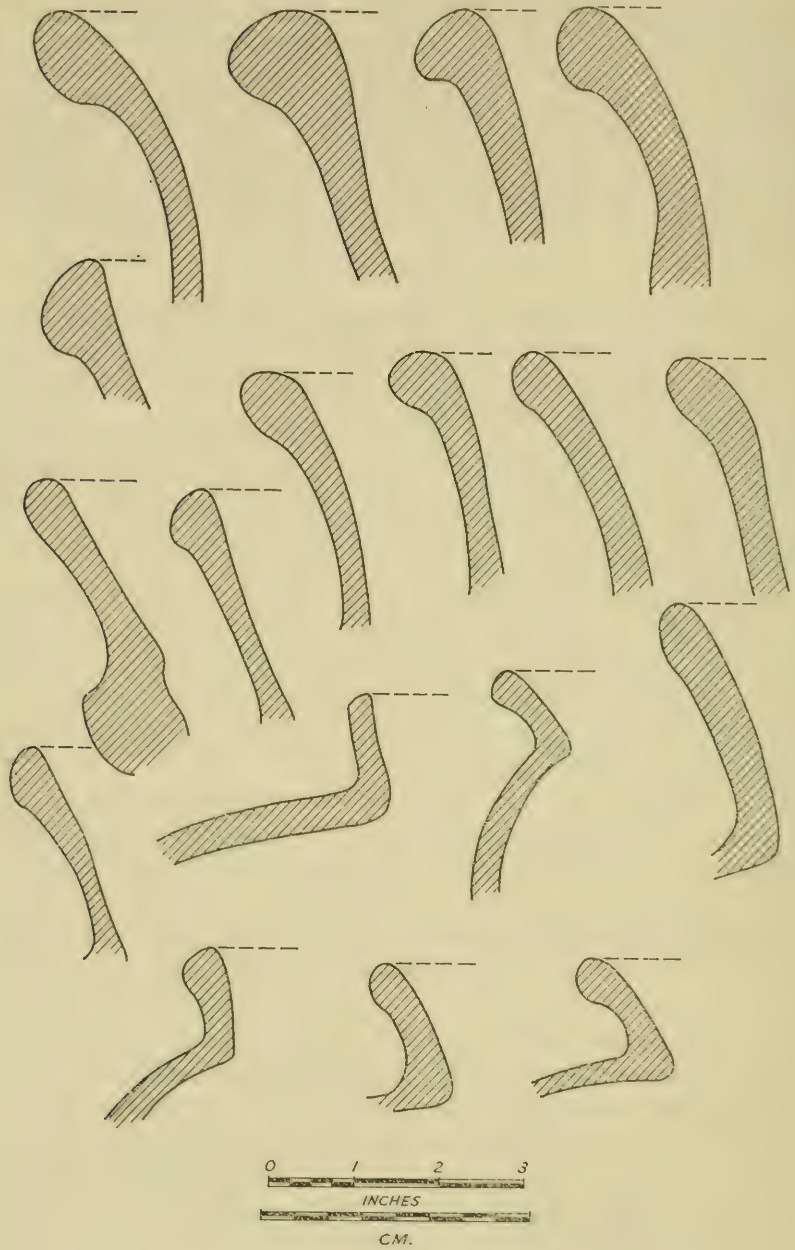
0
1
2
3
INCHES
CM.

FIGURE 25.—Rim profiles found at Taboga-1, Trench 1, 0″–24″.

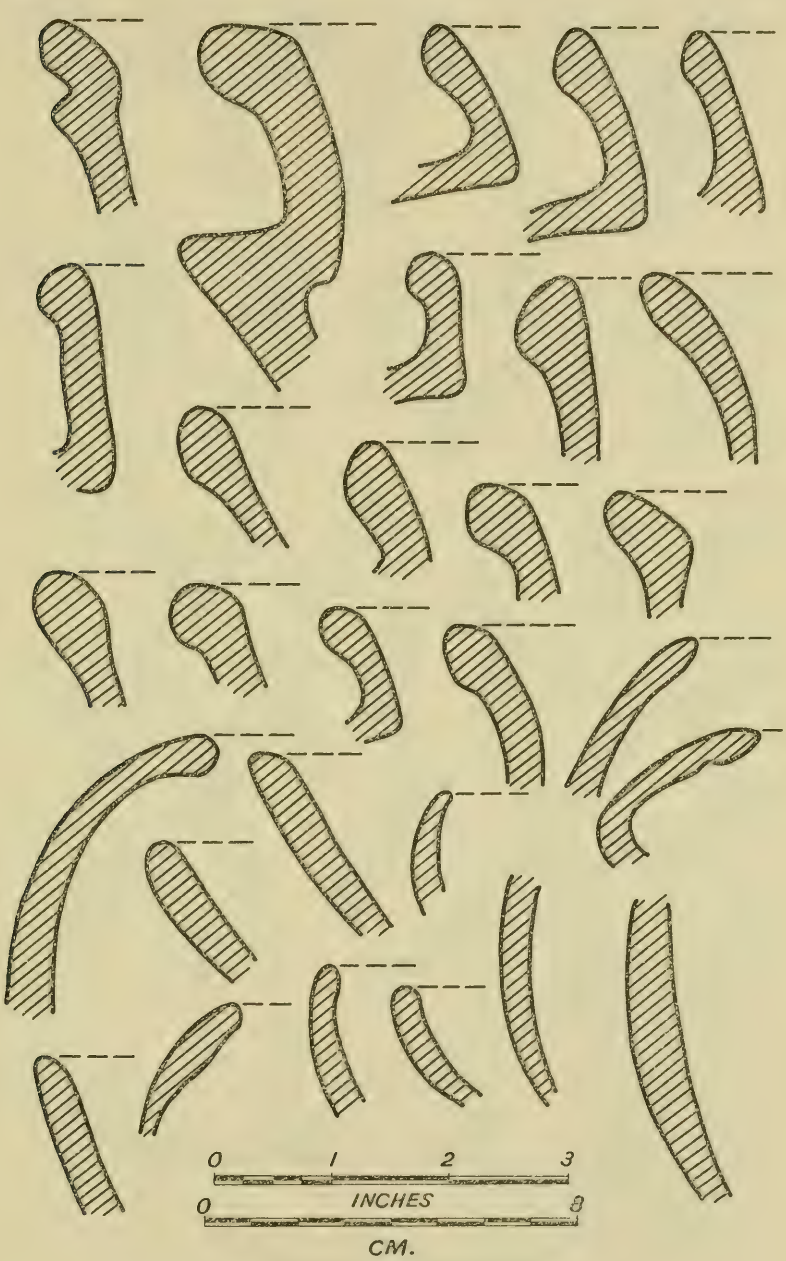
0
1
2
3
INCHES
0
8
CM.

FIGURE 26.—Rim profiles found at Taboga-1, Trench 1, 12″–24″.

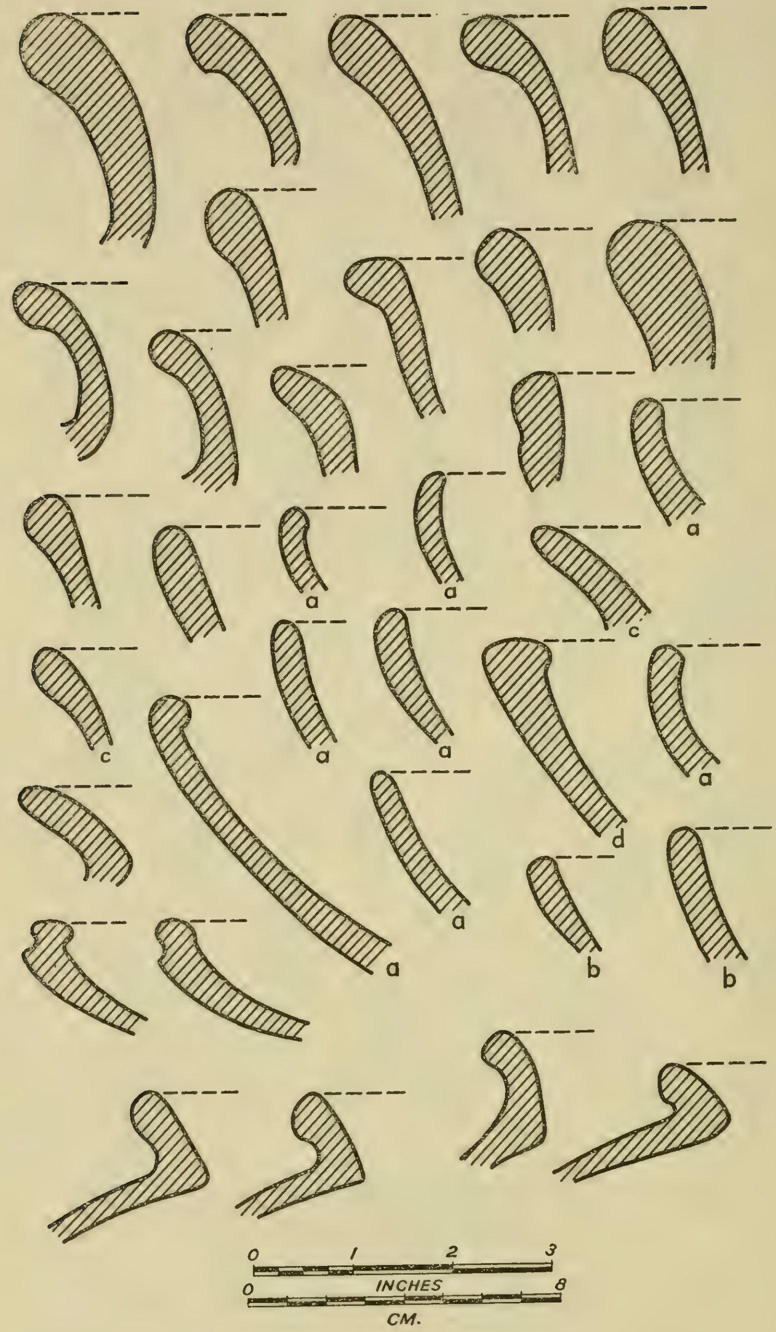
a
a
a
c
c
a
a
a
d
a
a
b
b
0
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FIGURE 27.—Rim profiles of red painted ware found at Taboga–1, Trench 2, 0″–12″.

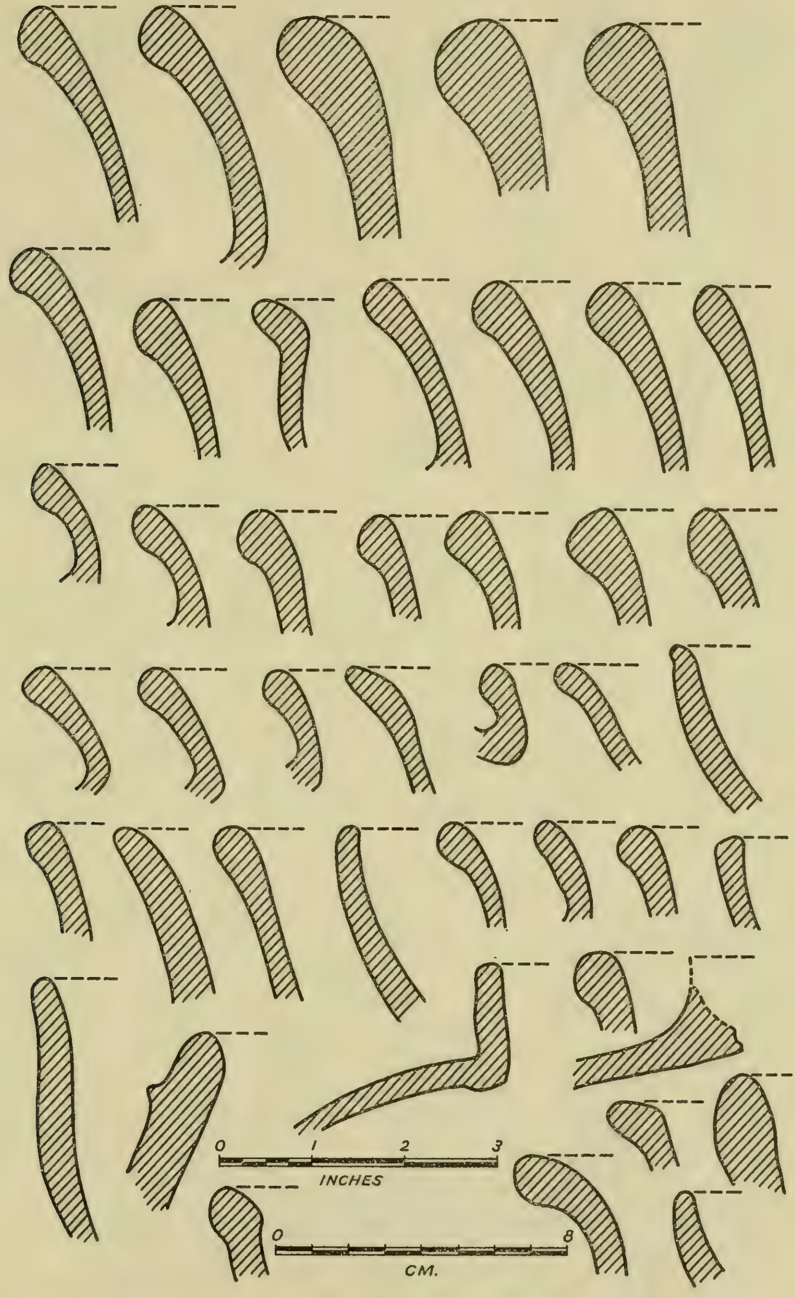

0
1
2
3
INCHES
0
8
CM.

FIGURE 28.—Rim profiles from large vessels found at Taboga-1, Trench 2, 12″–24″.

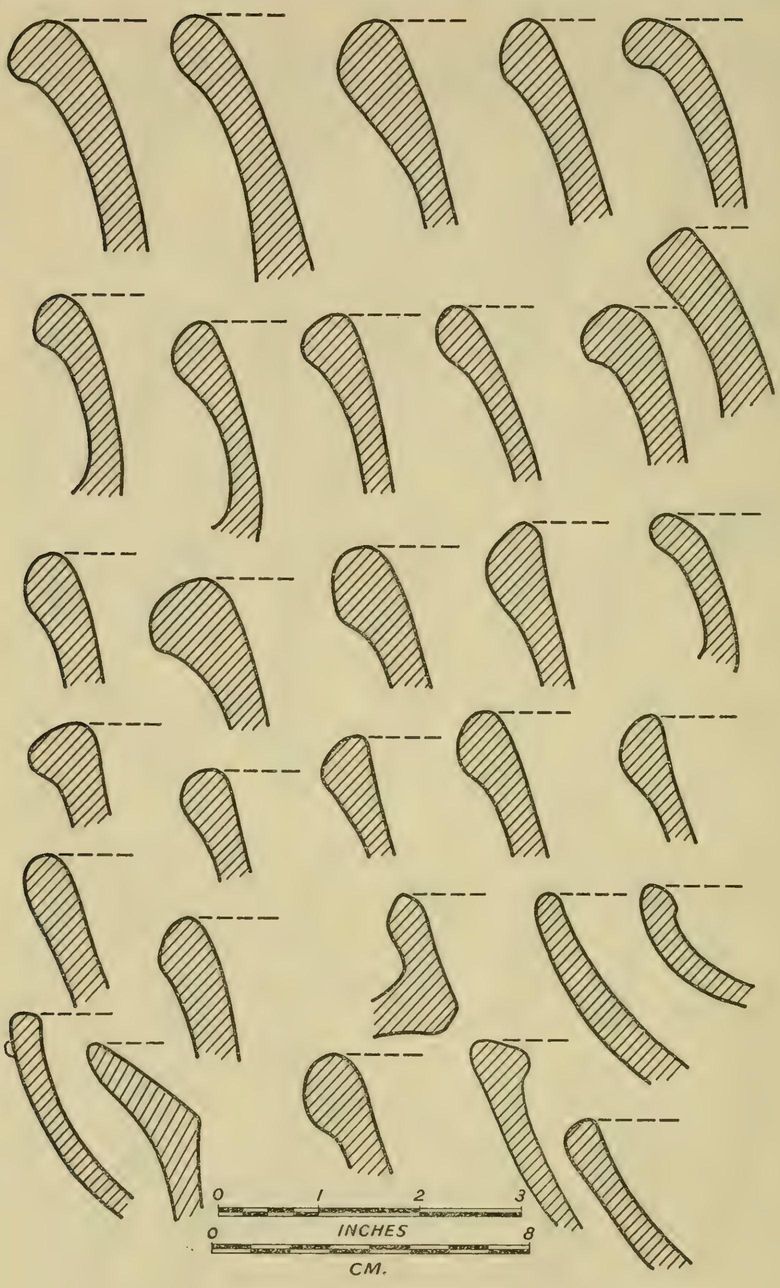

0
1
2
3
INCHES
0
8
CM.

FIGURE 29.—Rim profiles found at Taboga-1, Trench 2, 12″–24″.

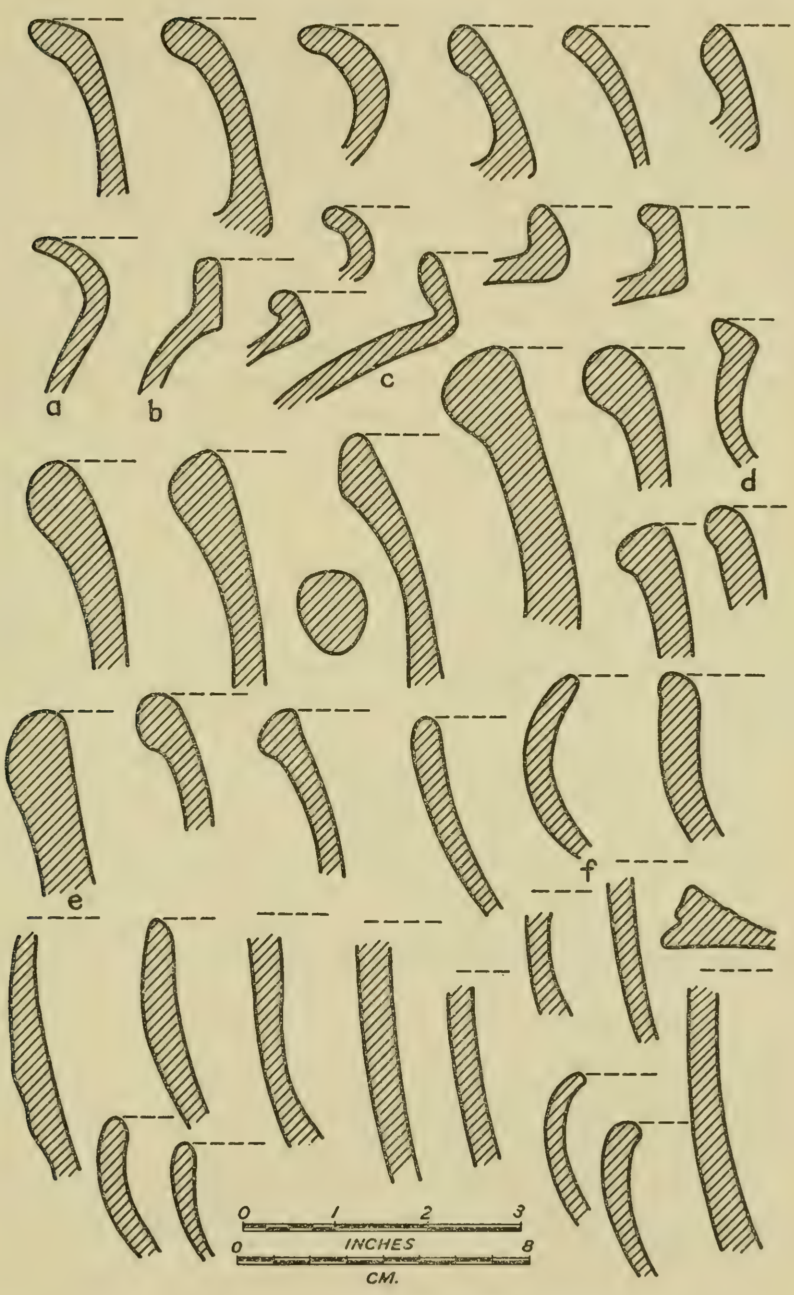

a
b
c
d
e
f
0
1
2
3
INCHES
0
8
CM.

FIGURE 30.—Rim profiles found at Taboga-1, Trench 2, 24″–36″.

## POTTERY WARES

*Buff ware.*—There are three primary types of ware at Tab–1. Unslipped buff ware is the most abundant. The majority of these vessels were more or less globular jars with short collars and outflaring rim with thickened lip. In 12 percent, the lips are painted red.

Using Munsell equivalents, the surface color varies from an orange cast 5YR 6/6, to a yellowish cast 10YR 7/6. Sometimes both of these variants can be found on the same pot as well as gray, orange, and brown firing clouds. Therefore the exact shade is not particularly significant. The exteriors of the pots generally are well smoothed. In some cases there are surface striations from dragging of temper particles during smoothing. The interiors are not as well finished. Some show narrow marks of a smoothing implement such as a pebble, or wider marks as from a gourd.

The surface is slightly rough to the touch, and sherds that have weathered are sandy and granular on the surface. It is probable that this ware was self-slipped.

Buff ware varies considerably in the color of the paste. It sometimes is fired with a gray core and buff margins of equal thickness. Sometimes the gray core is 95 percent, with narrow buff margins. Occasionally it is completely buff, evidently as the result of being fired more heavily. These variations hold for very thin as well as very thick ware.

Tempering material is granular with angular particles, medium to coarse in texture. In some instances temper is used moderately; in others, heavily. Flakes of white and red usually are mixed in.

The pottery does not break evenly; the fractures are rough and granular. Thickness in buff ware varies from 6 mm. to 23 mm.

*Orange Slipped.*—The shapes in general are the same as the buff ware, excepting that there were a few shallow bowls with outflaring rims.

The slip is moderate orange 5YR 5/6 with splotches of light brown 5YR 5/6.

The slipped surfaces often show fine parallel ridges, made by the polishing stone, which are rough where the slip has weathered away. Particles of mica glisten on the surface.

The orange-slipped surface is smooth but not slick. Unslipped interiors are often rough and granular. This slip seems to be more thinly applied than is the red slip.

The paste is a moderate orange in color varying to light brown.

Frequently the rims, and sometimes the interiors, of this ware are painted red. When orange-slipped ware is painted red, the result is a much truer red than that seen on red-slipped ware, either because it is a thicker application or, more probably, because it appears darker over the orange slip. It is a strong red, 5R 4/10.

*Red Slipped.*—Shapes were less restricted than with the other wares. In addition to the typical buff ware forms, there were globular jars with straight collars varying from 2 to 4 cm. in height. There was one bowl with a thickened, incurving rim.

The slip varies in color from moderate reddish orange, 10R 6/8 and 10R 4/10 to moderate reddish brown 10R 4/8, and dark reddish orange, 10R 5/8 or 5/6 and 7.5R 4/10.

The exterior is well smoothed and the red slip is polished and slick to the touch. Usually the slip contains mica. The interior is sometimes smooth, but often it is left rough with particles of the temper protruding from the paste.

Marks of the polishing implement are frequently visible on the surface, giving it a streaked, uneven luster.

The slip itself is moderately heavy and is crazed and abraded in many cases.

In color the paste is weak yellowish orange 10YR 7/6 to weak orange 5YR 6/6 and light brown 5YR 5/6. It generally is fired evenly. Red-slipped pottery which is decorated is finer tempered and breaks evenly.

The texture of this ware is generally medium to coarse with angular tempering material including mica. In some instances white quartz is abundant giving the fractures a "snowy" appearance.

Red-slipped ware varies in thickness from 6 to 12 mm.

## TABOGA-2

About 400 meters northwest of Taboga-1, and at a somewhat higher elevation, is another occupation site with a much thinner deposit of midden material. No excavations were made here, but a surface collection showed that the pottery is similar in most respects to that in Taboga-1.

There is one pedestal base bowl painted red on both the exterior and interior; another had black stripes on a red base on the exterior, while the interior is plain. The one unique sherd was a medium high collar rim with horizontal combing on the interior and vertical combing on the exterior. It was unpainted and had a flat lip. One body sherd was decorated with two notched raised horizontal lines.

Our conclusion was that the occupation was contemporary with Taboga-1.

## TABOGA-3

On the north side of the main arroyo that flows through the village, and about 600 meters northwest of the last houses, is a rock shelter cave at the base of a small cliff about 200 meters from the stream. It is about 16 meters across the mouth and 10 meters deep. It evidently had been used as an offertory, or burial place, but we found no bones in it. Although the earthen floor was about 1 meter in depth, the cultural material did not extend below 25 cm. Potsherds were abundant, but there were no shells or other evidence of midden material. The great majority of the sherds consisted of fragments of large ollas, some with smooth, some with combed, surfaces. The necks of the ollas frequently are decorated with horizontal combing or what may be cord impressions. A few body sherds had a red slip on the exterior and one had a row of bosses around the shoulder, made by pressing from the interior. A number of sherds were carbonized on the exterior from use on the fire. Some bottom sherds from large ollas were up to 4.5 cm. in thickness.

## TABOGA–4

Approximately 400 meters west of the sandspit that joins Taboga with El Morro at the north end of the island, there is a small valley with a stream that flows only during the wet season. About 200 meters above the mouth of this stream, and approximately 50 meters above sea level on the north side of the slope, is a midden deposit about 40 cm. deep.

We excavated a trench in approximately the middle of this, 8 meters × 8 meters, saving all of the sherds. We were struck by the fact that the pottery differs considerably from that in Taboga–1.

Painted ware consists typically of red and black stripes on a buff or cream slip. Sometimes black stripes were on a red slip. Frequently either the entire interior or exterior, or both, were red slipped. The "red" color varies from orange to red. The more elaborately painted examples were bowl forms, frequently with flat beveled rims.

Larger vessels were olla forms of buff ware with outflaring rims or collared necks. The necks usually were decorated with rough combing, probably done with the edge of a scallop shell. Often these vessels had the lip painted red. Commonly the olla bodies were roughened by brushing.

Some of the more noticeable points of difference from Taboga–1 were the much larger percentage of combed or brushed ware, the lack of enlarged lips, and the apparent complete lack of incising.

Stone artifacts were rare. There was one crude celt of a bluish black stone, and quite a number of flint chips including one long lamellar flake.

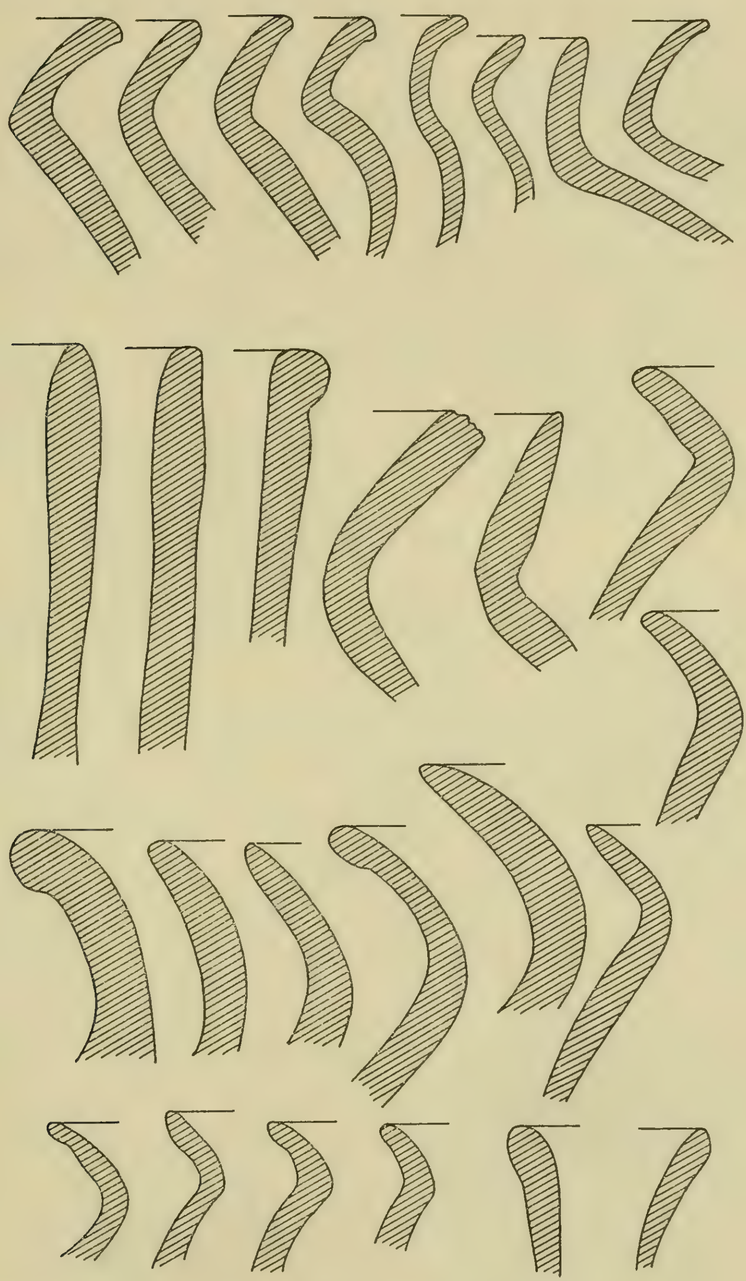


FIGURE 31.—Rim profiles from Taboga-3.

### TABOGA–5

On the precipitous south side of Taboga there is a cave located directly below the highest part of the island. It is about 5 or 6 meters above high water. There is no beach along this exposed part of the island. To visit the cave we landed from our boat on a rocky ledge and easily reached it by skirting the lower part of the cliff.

The cave slopes downward at about a 20° angle and the entrance is not high enough to stand up in. It seems to have been a high narrow cleft, the floor of which has been built up with bat dung and by material washed in from the hillside. It is quite dry.

In climbing up the short talus below the mouth of the cave we saw a number of potsherds. The cave is apparently quite deep and is inhabited by myriads of vampire bats. We did not have lights and therefore did not enter. It is quite probable that it contains offerings, judging from the potsherds on the talus.

## URABÁ ISLAND

The rocky and precipitous islet of Urabá lies to the southeast of Taboga, from which it is separated by a narrow but deep channel. It has no permanent water and but little land suitable for cultivation. At the present time it is unpopulated.

Our Taboga Island guide told us that he knew of some rock shelters containing human bones and large pottery vessels in an area so rugged that it was practically never visited.

With an outboard motor we left Taboga, passed through the channel, and, following the south side of the islet, entered a deep hidden cove at the southeast corner. From this point we cut our way up a steep spur of the mountain and down to the north side. Here is an impressive cliff of massive basalt about 60 meters high. A broad shelf at the base of the cliff is covered with a pile of huge angular blocks of basalt fallen from the cliff. We climbed through and over this tangled mass of stone, some of the blocks as big as a small house. The rocks are overgrown with tropical trees and the whole area is a roost for hundreds of pelicans. Our guide asked us to wait while he located the site, and in 10 minutes he returned carrying a big olla. He brought us to a place where three gigantic blocks combined to form a rock shelter about 4 × 5 meters in area. Open in the middle, there is an overhang on both sides. Looking down we could see a dozen or more pottery ollas, mostly broken, but apparently disturbed only by nature since they had been placed there.

About 30 meters north of this main depository, we found another containing three pots. We photographed the offerings as they were, then, after cleaning out the accumulated rubbish, photographed them again. All of the large ollas were broken to some extent and in many instances pieces had fallen into crevices, or been covered by small slabs of stone (pl. 57).

The largest number of pots had been placed in the north end, where they were somewhat exposed. Others had been placed far back under both the east and west overhangs. At the extreme rear of the east side there were fragments of human long bones, well chewed by rodents. It appeared that the bones belonged to a single individual.

Under the east overhang, which was a sort of two-story affair, more pots were placed well back on the main floor. On the rather narrow upper floor had been put two small jars. These latter had been so well protected that they were still in their original upright positions. They were intact, and each contained within it a rather

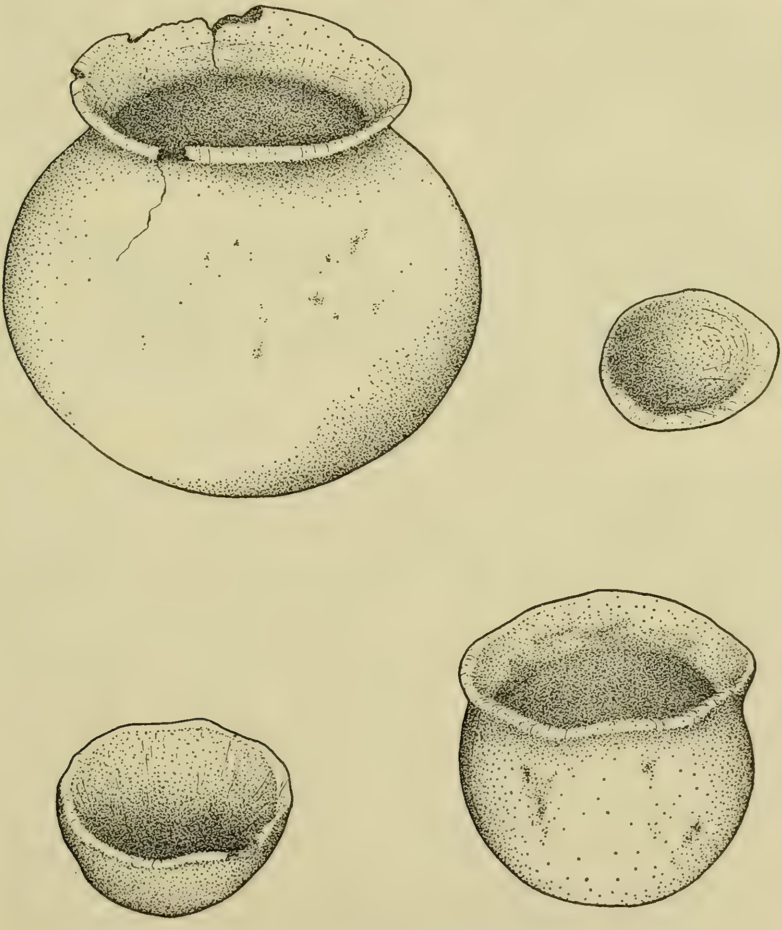


Figure 32.—Small pots with miniature saucers from Urabá.

crudely made saucer-shaped miniature vessel. As nearly as we could tell, there were 23 pots in all.

The entire collection filled six large potato sacks and it required three round trips for our two men to transport them to the boat. Two ollas were too large for the sacks and were carried separately.

Two of the ollas had traces of red paint and one small vessel had a simple geometric pattern in black painted on the interior. The pottery varies in color from light buff to brick red, and is very hard. Considering the size of the majority of the vessels, the tempering is not coarse. The wall thickness of the large ollas generally varies from 5 to 13 mm., but the bases on some are 26 mm. thick. Approximately one-half are decorated with rather haphazard combing, probably done with a scallop shell. The remainder are smooth and plain. The typical shape is that of a round-bottomed rather squat olla with outflaring rim. One large and one small vessel had a bevel around the widest part of the body. The small pots were made of the same type ware and were similar in shape excepting for the two saucer-shaped miniatures placed inside small vessels as described above.

The large ollas varied in height from 30 to 40 cm. The largest orifice measured 33 cm. across (pls. 55, 56).

It is evident that the pottery deposits were burial offerings, undoubtedly for bodies brought from Taboga. Bones apparently were not placed in the urns, which presumably contained food. It is probable that Urabá was uninhabited in prehistoric times but may have supported limited cultivation by the people of Taboga as it does today.

## TABOGUILLA ISLAND

On Taboguilla Island we excavated three sites. Two of these are midden deposits on the west side of the island. Taboguilla–1 is located at an elevation of about 115 meters above the sand beach where, at the time of our visit, a few unoccupied shacks were located. Taboguilla–2 is at an elevation of about 100 meters almost directly below Taboguilla–1. Since the two deposits seemed to contain the same type of material, we excavated a test trench in Taboguilla–2 to check on this fact, and concentrated our efforts on Taboguilla–1, which was considerably larger and more productive. The refuse of Taboguilla–1, consisting of black earth mixed with shell, was somewhat more than 1 meter in depth. Potsherds were very abundant and in a good state of preservation. We conducted the excavations stratigraphically, but our statistics showed no change in the type or proportions of the ceramics. We concluded that the midden represented a single occupation over a not very considerable length of time.

Taboguilla–3 is a rock shelter about 200 meters south of Taboguilla–1.

## TABOGUILLA-1 AND TABOGUILLA-2

### CERAMICS

Considerable thought and time were put into a decision on the matter of color nomenclature. The problem is a common one in Panama: red vs. orange. Since frequently sherds from the same

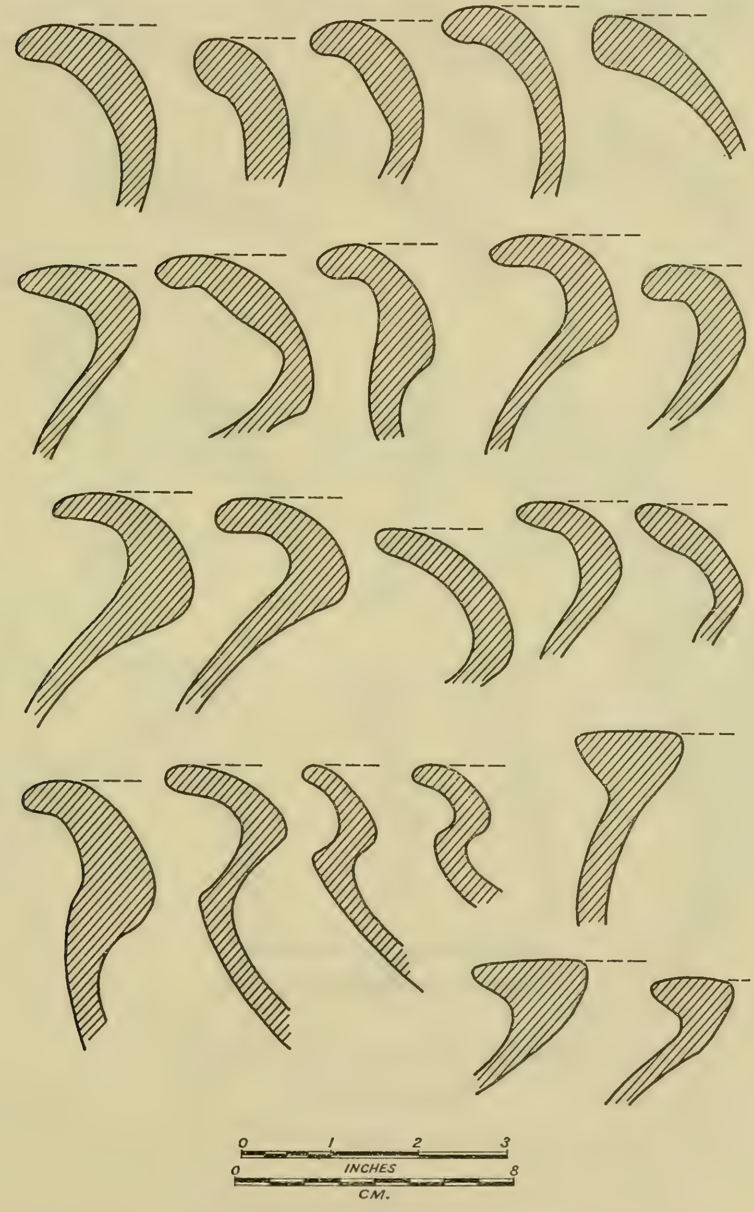


Figure 33.—Rim profiles from Taboguilla-1.

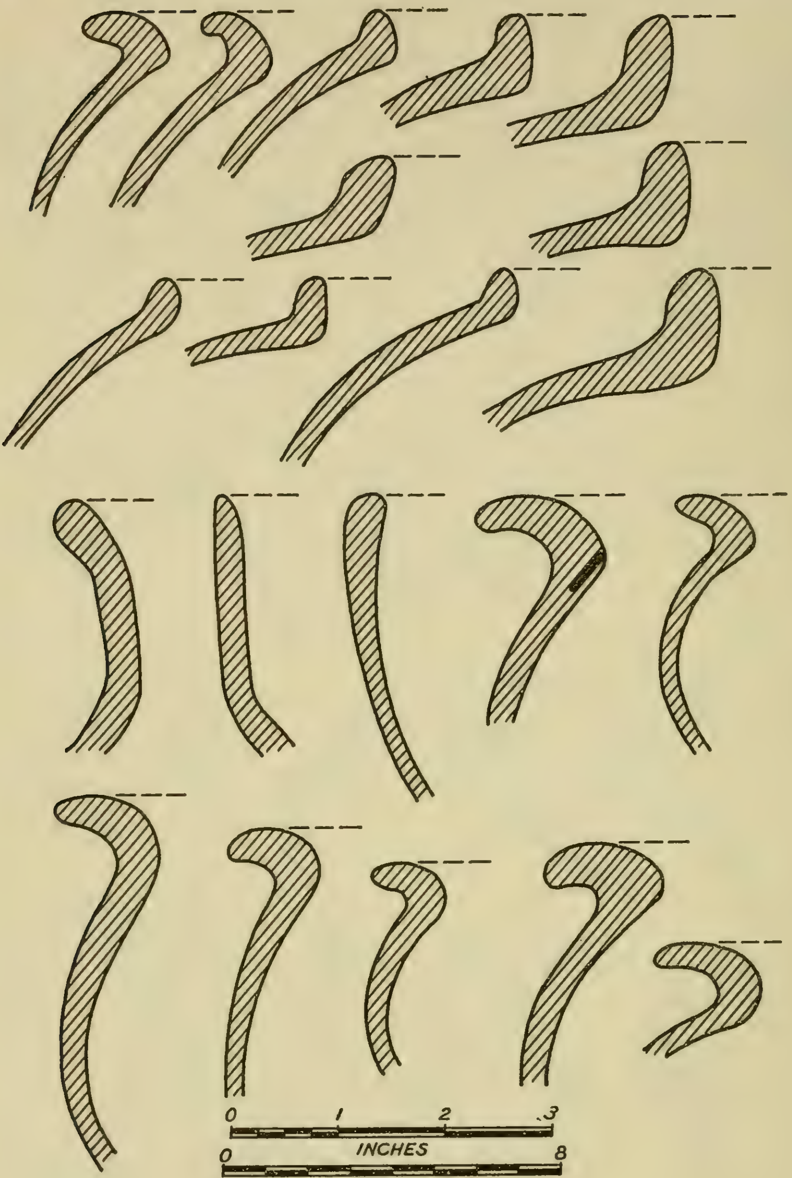

0
1
2
3
INCHES
0
8
CM.

Figure 34.—Rim profiles from Taboguilla-1.

vessel showed a considerable variation in shade (from reddish orange to yellow orange) we considered grouping all such colors under orange. However, definite oranges are found on interiors and exteriors of painted sherds and in several instances red was applied on orange as an intentional color contrast. We finally decided to retain the distinction of red, orange, and buff, giving Munsell equivalents with the realization that certain vessels show a considerable range in hue. The only true reds are probably either the black on red type or those instances where we have red on orange. Vessels showing a color range, for example, are (pl. 71, *a*, *c*, *d*), which vary from dark tones, Morocco Red (pl. 58) to Madder Brown (pl. 70), Brick Red (pl. 70), Kaiser Brown (pl. 71), and Hay's Russet (pl. 71). The lighter tones are more common.

The oranges are Ferruginous (1 YR4.5/8), Vinaceous-Roufous (10R4.5/9) (pl. 71), and Ochraceous Tawny (yellow orange) (pl. 72).

The light buffs are Cartridge Buff (pl. 87), Cream Buff (pl. 87), and Light Buff (pl. 72).

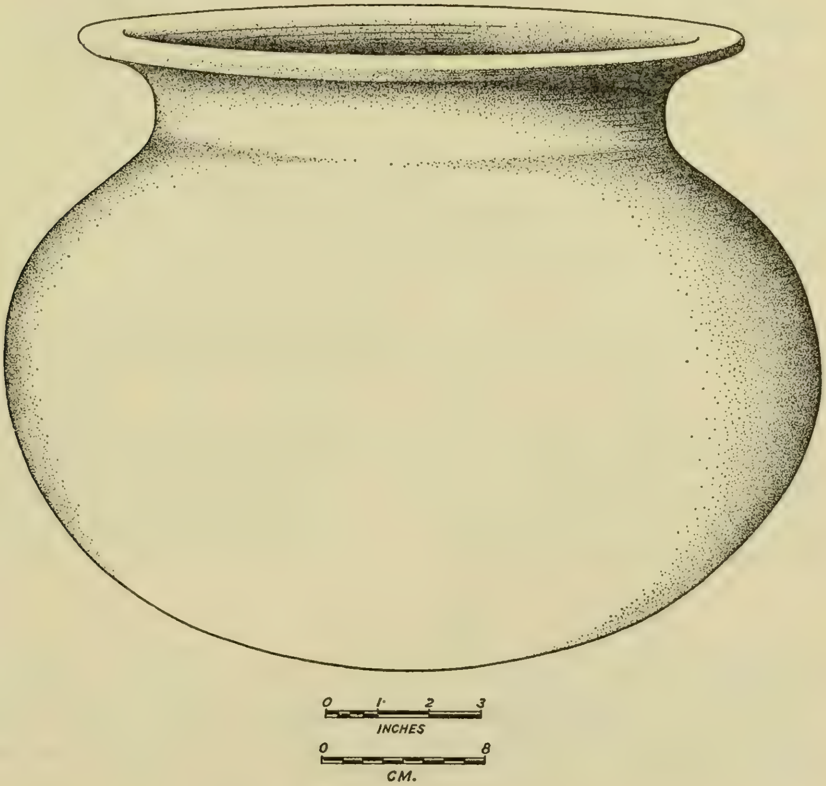


FIGURE 35.—Restored Taboguilla buff ware jar.

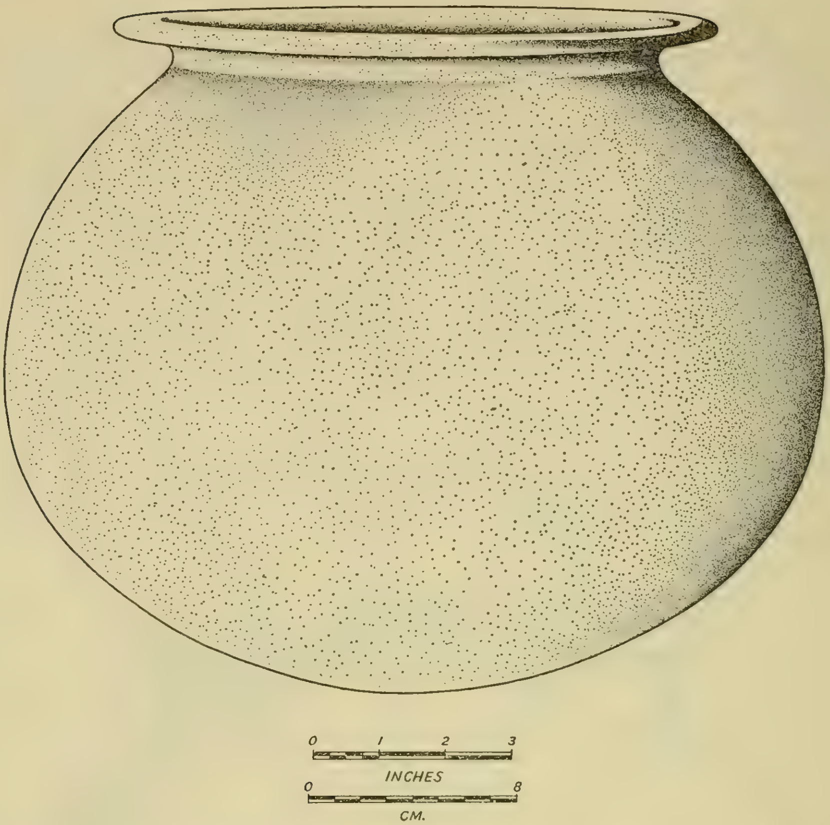


Figure 36.—Restored Taboguilla globular buff ware jar.

The browns are from Brown-Bay to Burnt Sienna (pl. 59), Mars Orange and Liver Brown (pl. 71), and Sanford's Brown and Hay's Russet.

The only other colors used were black and white. All possible combinations of these three colors were used at one time or another. Although there is no inflexible rule, the different color combinations tend to correlate with particular vessel forms. A discussion of decorative techniques follows.

### PAINTED WARES

*Trichrome.*—The majority of the trichrome vessels were pedestal base bowls.

(a) Black-on-white exterior, black-on-orange interior with the orange overlapping the lip. A variant of this has a plain orange interior.

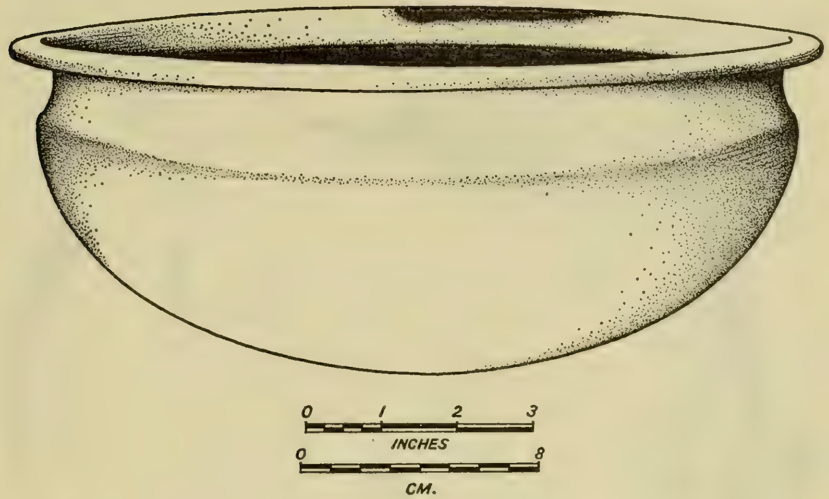


Figure 37.—Restored Taboguilla shallow buff ware bowl.

(b) Black-on-white interior, orange exterior. A variant has a white-on-orange exterior.

(c) Black-on-orange interior and exterior with white on the base.

(d) Black, white and orange exterior, black-on-orange interior.

(e) Black, white and orange interior, orange exterior.

(f) Black-and-white-on-orange interior and exterior.

(g) Black-and-orange-on-buff. One collander had this decoration.

*Bichrome.*—These combinations usually were applied to high-necked globular vessels.

(a) Black-on-white exterior.

(b) Black-on-orange exterior.

(c) Orange-on-white exterior.

(d) Black-on-red, interior or exterior.

*Monochrome.*—This ware is commonly in the form of globular pots with outflaring rim.

(a) Plain orange, interior and exterior.

(b) Plain orange, exterior.

(c) Plain white, exterior.

### INCISING

*Bold incising.*—This is a freehand technique where deep parallel lines were formed, usually in curvilinear patterns.

*Light incising.*—This is a somewhat more delicate technique in which parallel lines usually were applied to form a crosshatched design.

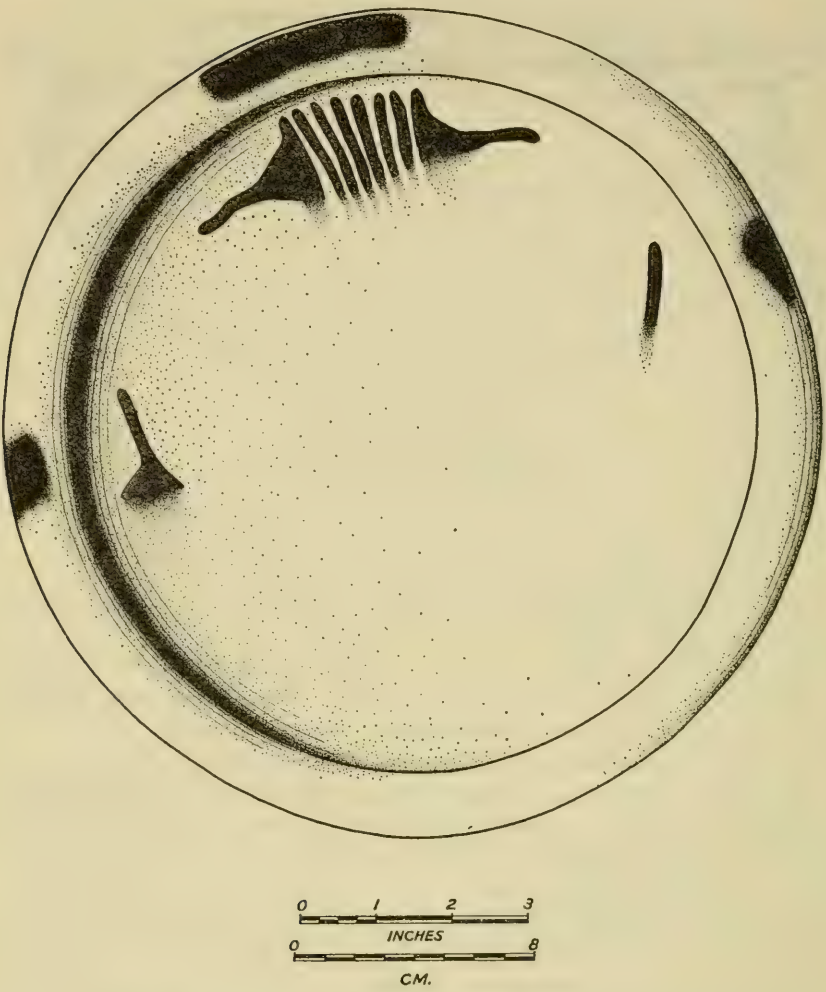


FIGURE 38.—Interior of figure 37, restored, with black painted design.

*Narrow line combing.*—This name has been given to a style where a comb with three or four tines was used to produce a special effect. Bands produced in this way were vertical, horizontal, curvilinear, crosshatched, or squiggled.

*Multiple line combing.*—As the name implies, a sharp comb with more teeth was used. The designs are less precise than in narrow line combing. Perhaps to be considered a variation of this, is combing with the edge of a pecten or scallop shell. This usually is applied rather lightly and produces an effect similar to brushing, as the lines are broad and shallow.

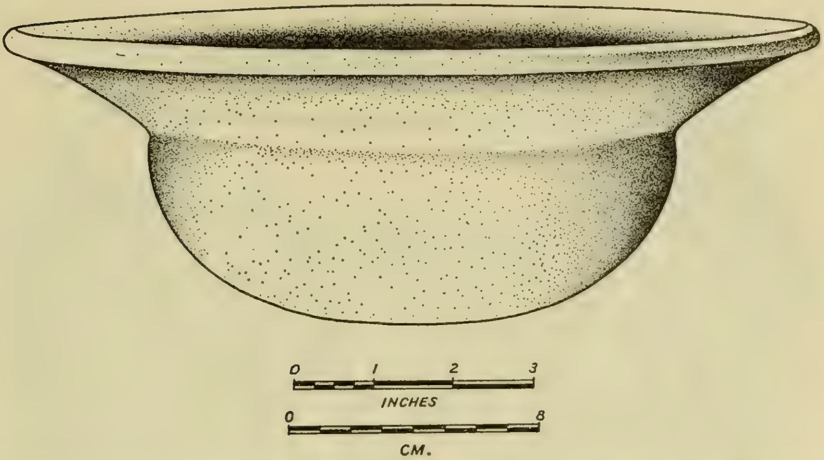
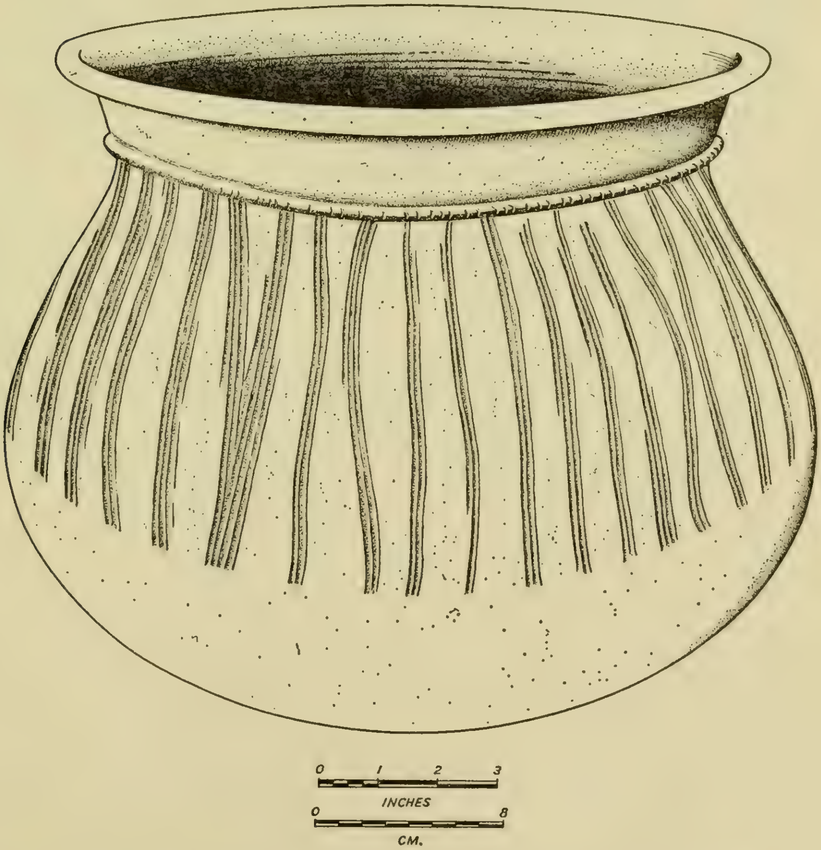

0
1
2
3
INCHES
0
8
CM.

Figure 39.—Restored Taboguilla orange-and-white bowl; orange body, white shoulder, orange interior and exterior lip.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2
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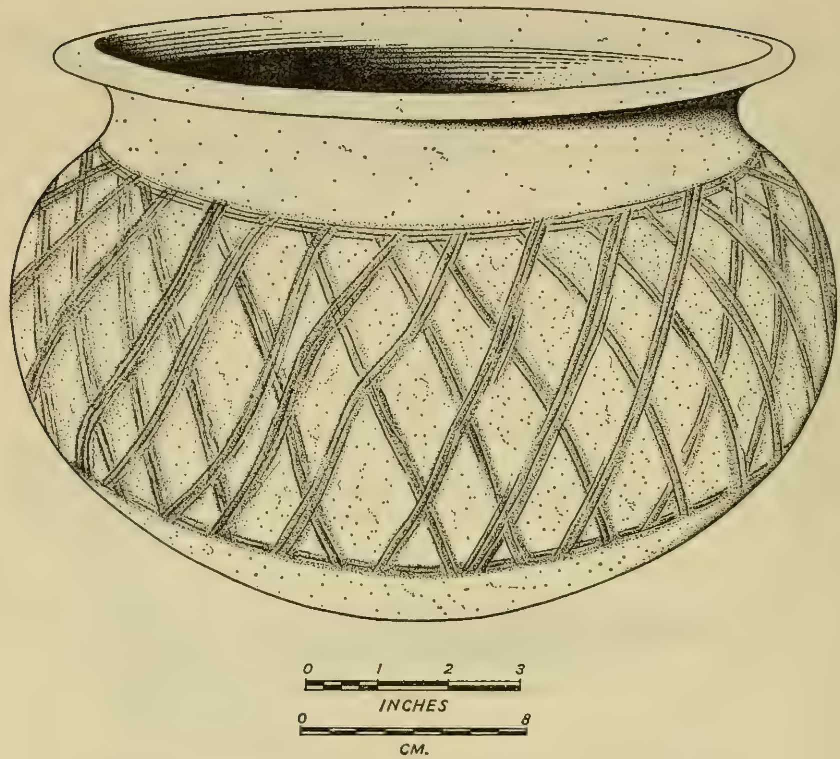
Figure 40.—Restored Taboguilla jar with deep multiple line incising.


0
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3
INCHES
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8
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Figure 41.—Restored Taboguilla jar with deep multiple line incising.

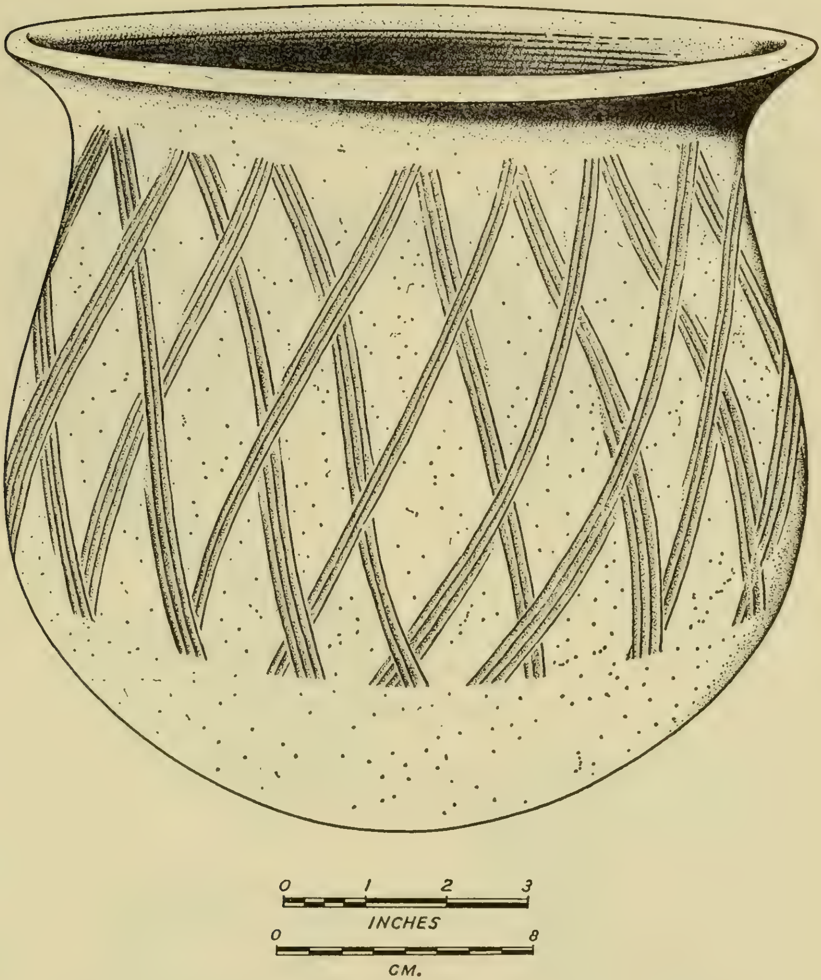
0
1
2
3
INCHES
0
8
CM.

FIGURE 42.—Restored Taboguilla jar with deep multiple line incising.

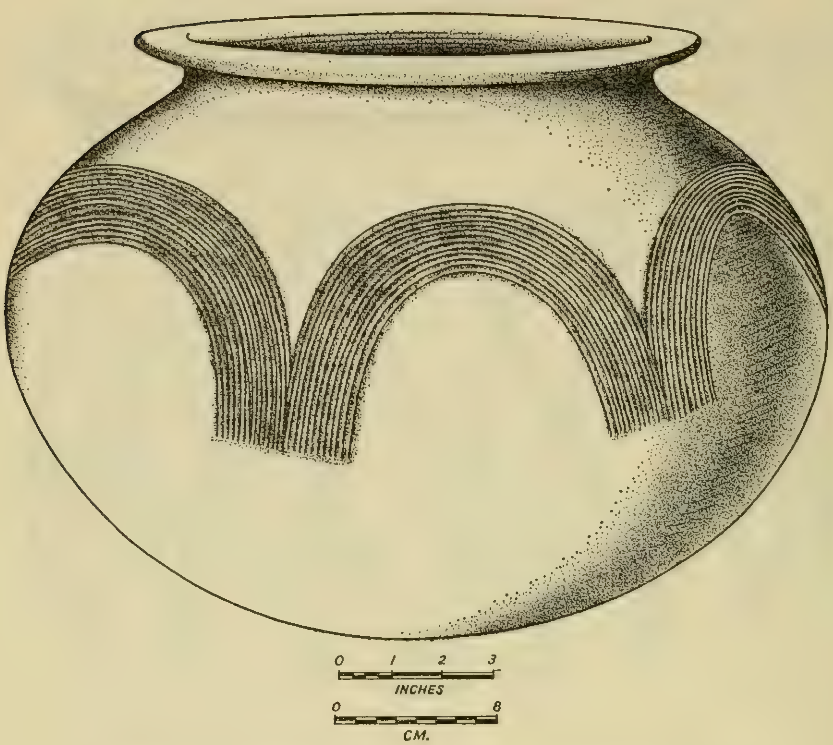
0
1
2
3
INCHES
0
8
CM.

Figure 43.—Restored Taboguilla jar with deep multiple line incising.

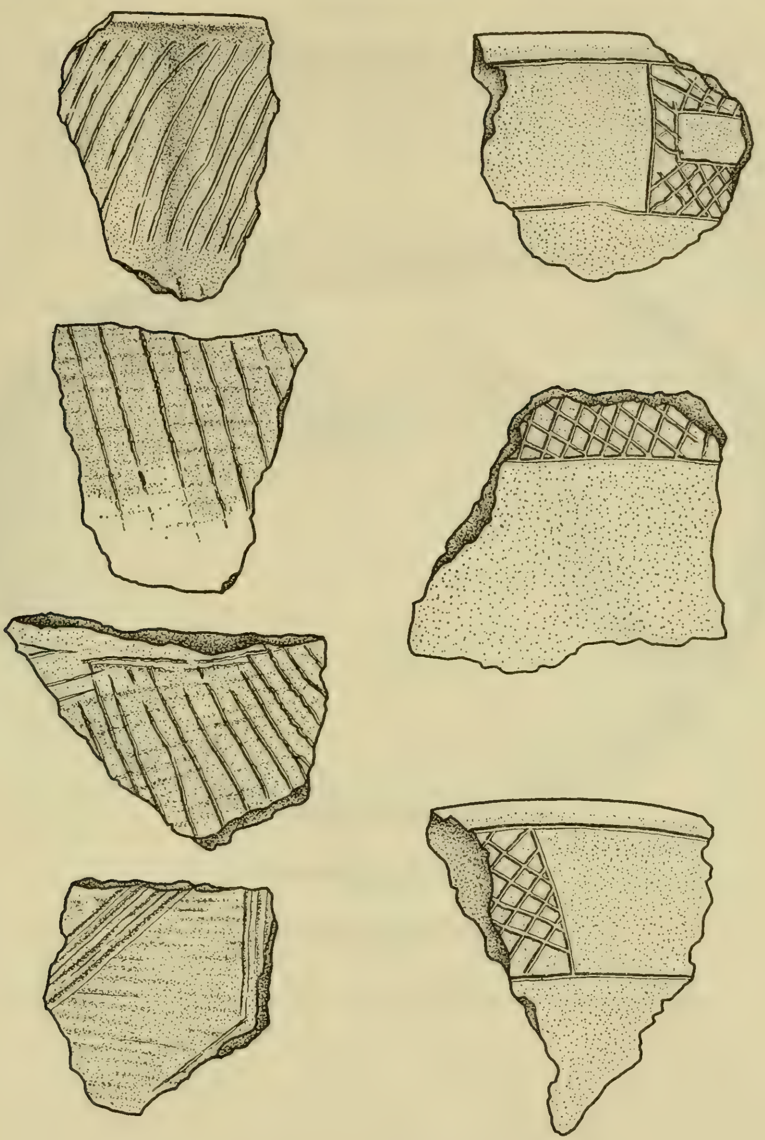

FIGURE 44.—Incised sherds from Taboguilla–1.

### INDENTED

The most common method of indenting was to press with the edge of a scallop shell. Indentations also were produced with a wedge-shaped implement. Ordinary punctate designs, produced with the point of a sharp instrument, are rare. Usually the punctations are coarse.

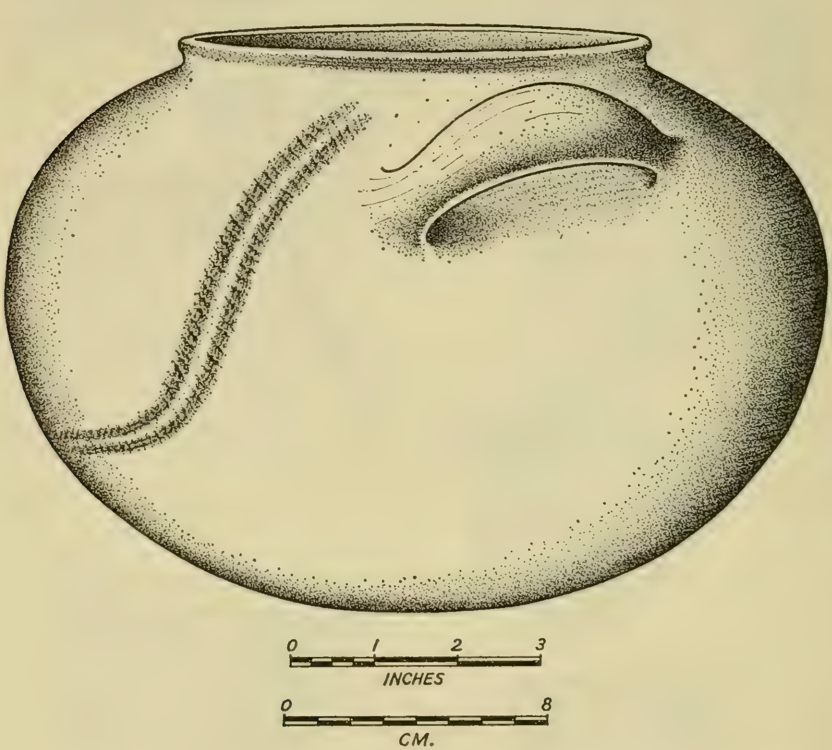

Figure 45.—Restored Taboguilla buff ware jar with scallop indented filleting.

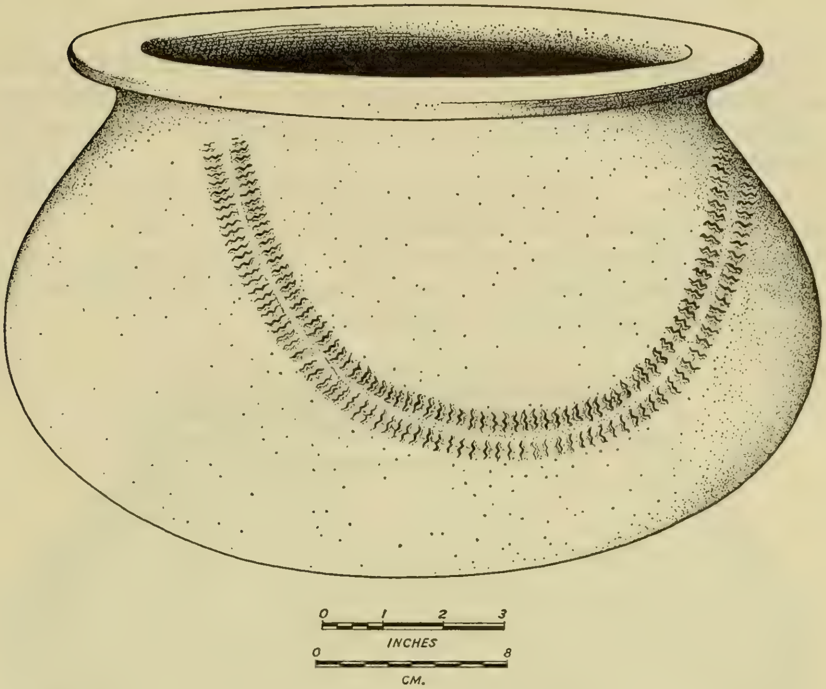
0
1
2
3
INCHES
0
8
CM.

Figure 46.—Restored Taboguilla buff ware jar with scallop indented filleting.

### APPLIQUE

*Filleting.*—Raised lines were applied horizontally, vertically, and in curvilinear style. Frequently the fillets were plain; more often they were decorated by indenting, either with a scallop shell or a wedge-shaped implement.

*Animal figures.*—Filleted designs occasionally were embellished further with stylized figures of lizards (alligators) or frogs.

*Bosses.*—Hemispherical bosses were used rather frequently. Sometimes they were isolated or in pairs, sometimes placed close together in parallel lines or in a haphazard fashion.

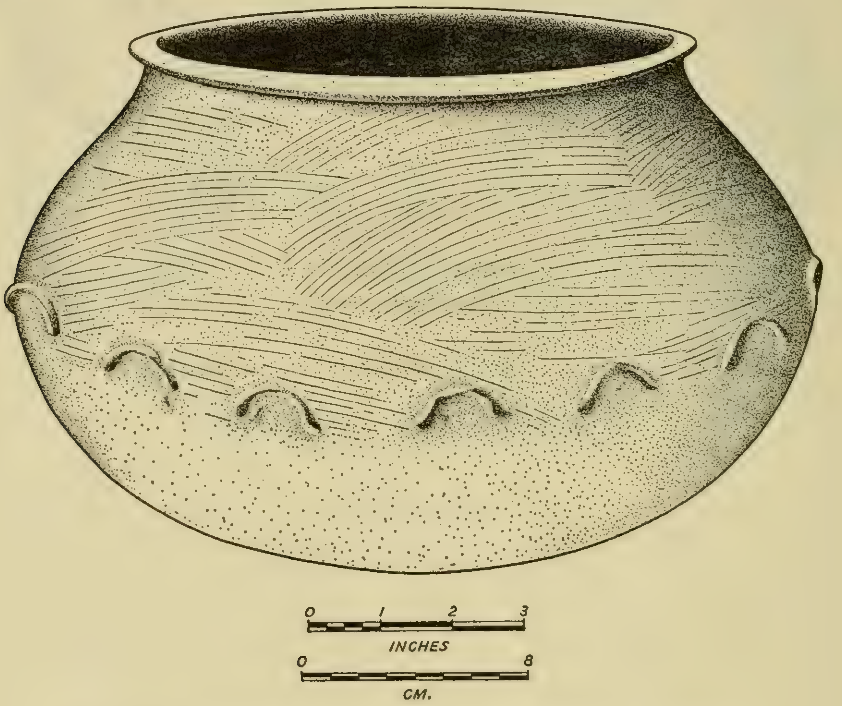

FIGURE 47.—Restored Taboguilla incised jar with applique crescents.

### HANDLES

Loop handles were attached to subglobular bowls of plain red ware. Some were flat, others round in cross section. The great majority were placed horizontally, but there were a few vertical examples.

### PEDESTAL BASES

The most elaborately decorated vessels, as a rule, were the pedestal base bowls. Instead of the regular sweeping upward curve usually seen in Panama, the Taboguilla examples typically have a bulge in the column between the base and the bowl. Some of the bases are decorated by pressing with the edge of a scallop shell. Most are scallop combed on the interior.

### TRIPODS

There was a single specimen of a Chiriquí type tripod bowl of brown ware. This was undoubtedly an imported piece, but is interesting because of its association. It was well polished on the exterior but rough on the inside. The body has a sharp shoulder decorated with bosses, and the inside of the outflaring rim had been painted red. The hollow supports had been broken off, so their form is conjectural.

### STONE AND SHELL

Artifacts other than pottery were extremely scarce. Two small celts of a hard fine-grained blue diorite are 7.5 cm. and 5.5 cm. in length. Broad at one end, they are pointed at the other. They are relatively thin and were shaped by a combination of flaking and polishing (pl. 65, *b*, *c*).

A third specimen of the same material is better finished, but its original form is puzzling. Although the photograph does not show this fact, it has a very sharp cutting edge at both ends, thus making it unique. Since both sides are broken off, it may be that it is the middle of an elongated implement with sharp sides (pl. 65, *a*).

A number of chips of yellow flint were scattered through the deposit, but no knives or arrowheads were found (pl. 65, *d*).

A single massive polished shell cylinder was found. It is unperforated and probably was not intended as a bead (pl. 65, *e*).

An imitation jaguar canine of shell, perforated laterally, was found in the nearby rock shelter (Taboguilla–3).

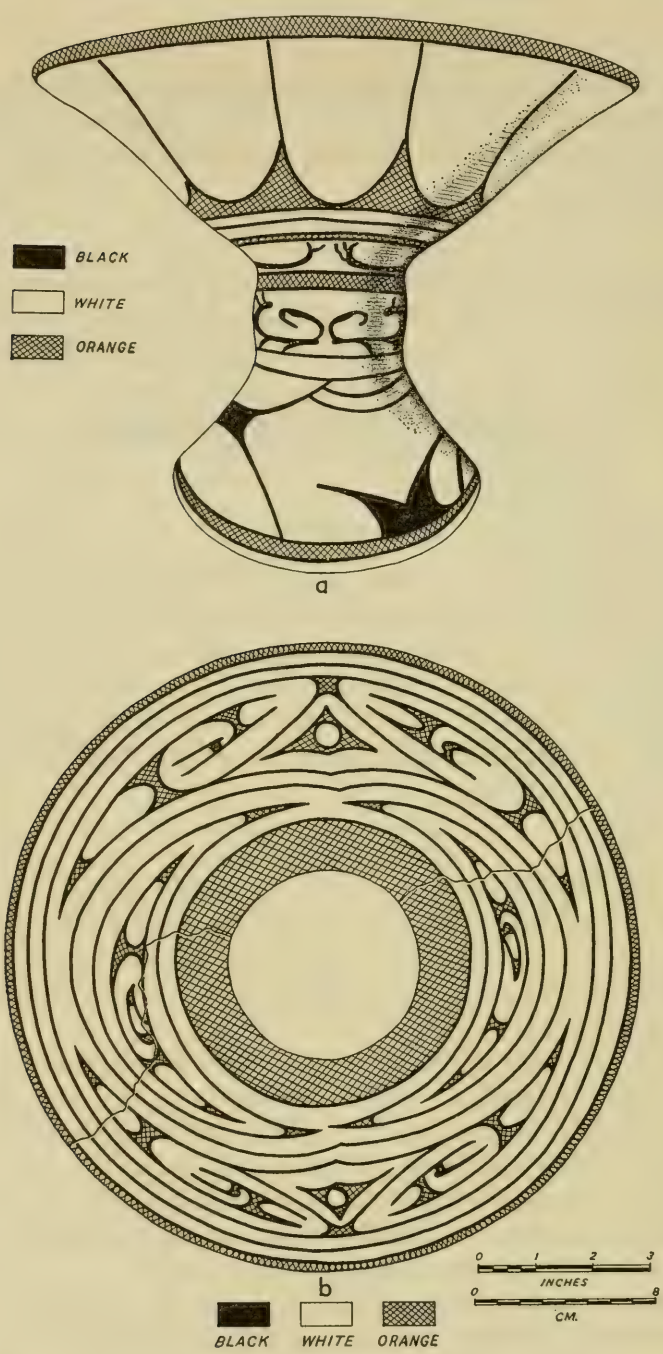
BLACK
WHITE
ORANGE
a
b
0 1 2 3
INCHES
0 8
CM.
BLACK
WHITE
ORANGE

Figure 48.—Restored Taboguilla pedestal base bowl with orange, black, and white decoration. *b*, Interior of *a*.

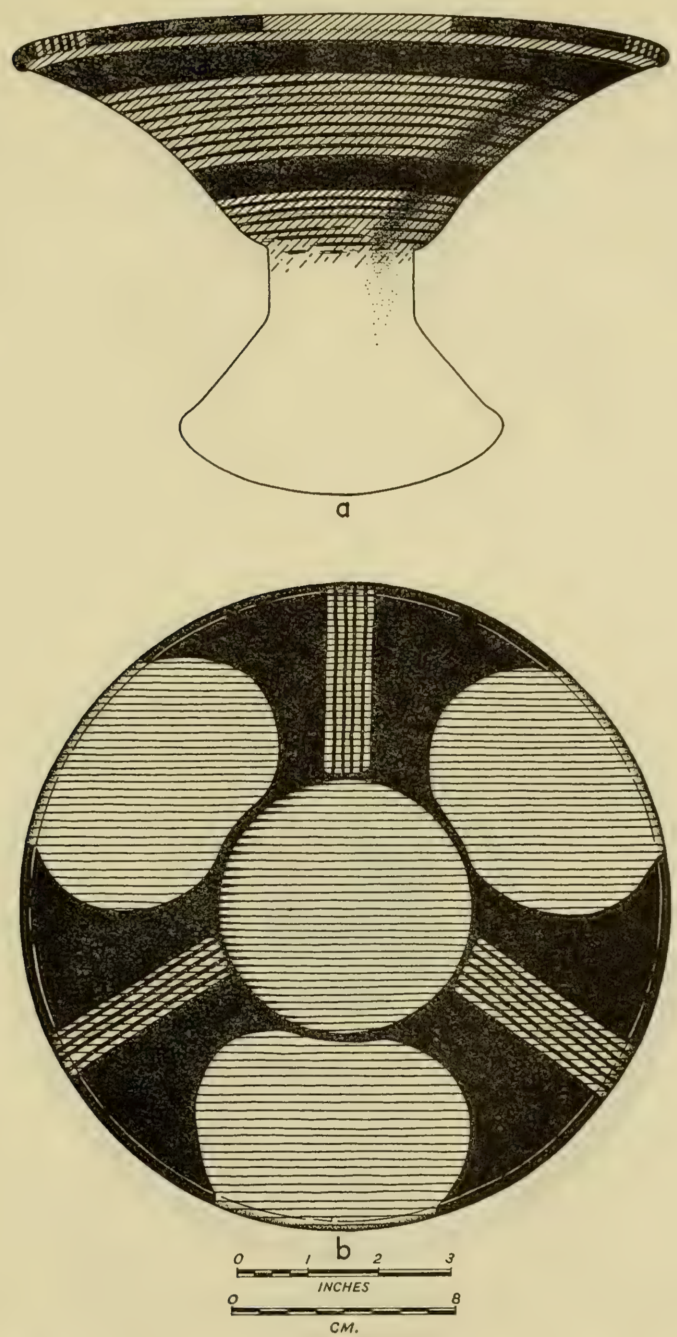
a
b
0 1 2 3
INCHES
0 8
CM.

FIGURE 49.—Restored Taboguilla pedestal base bowl with black and white decoration. *b*, Interior of *a*.

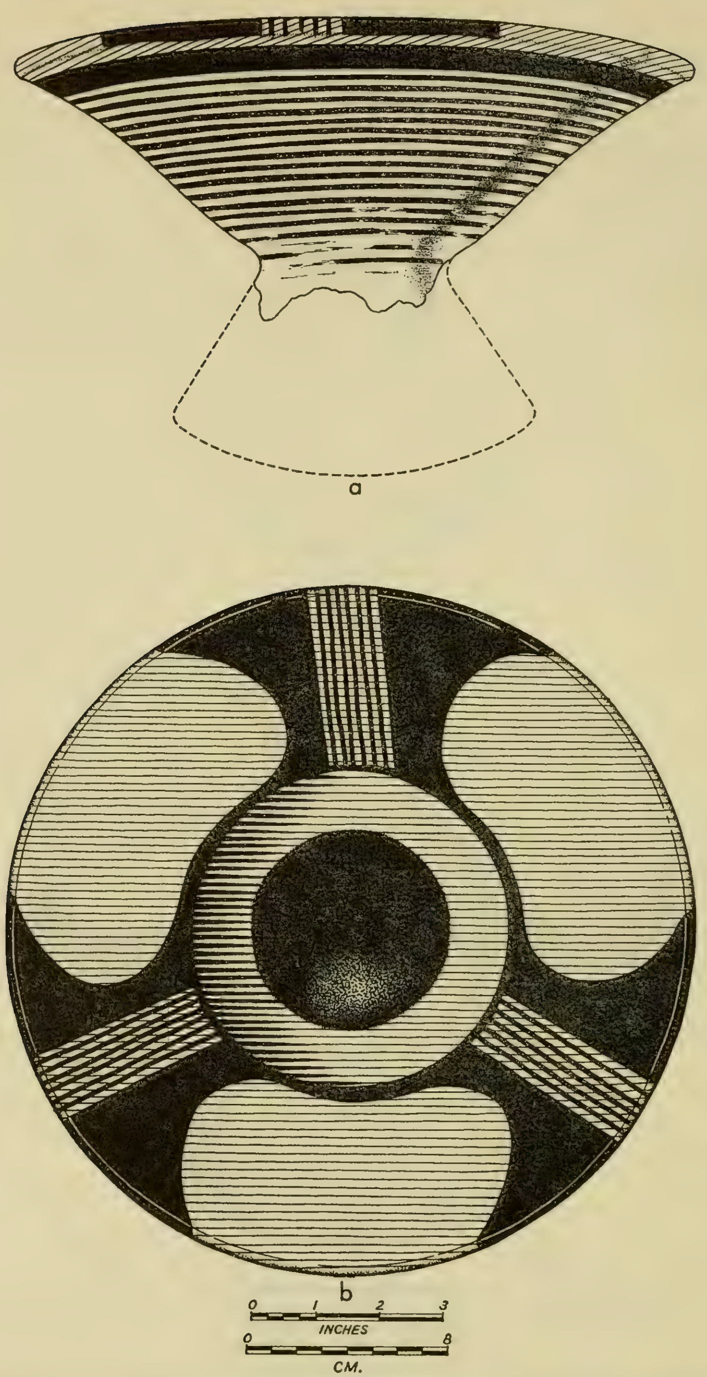
a
b
0
1
2
3
INCHES
0
8
CM.

Figure 50.—Restored Taboguilla black and white decorated pedestal base bowl.

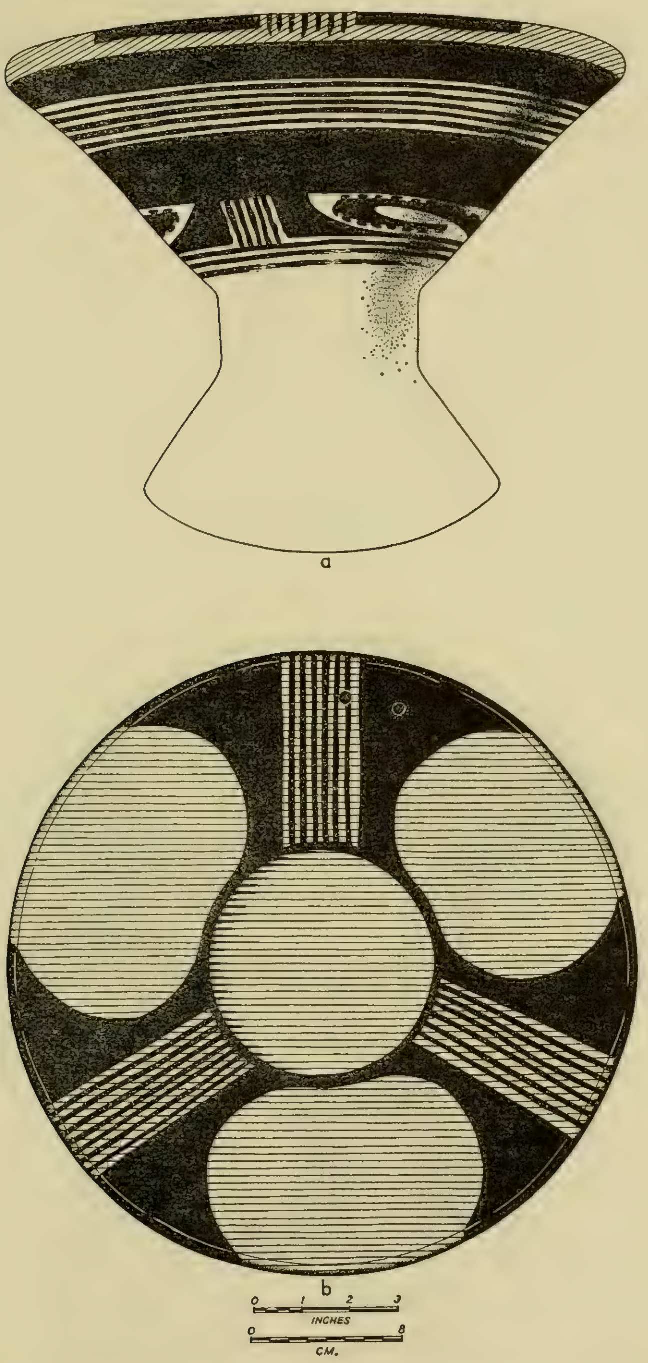
a
b
0
1
2
3
INCHES
0
8
CM.

Figure 51.—Restored Taboguilla black and white decorated pedestal base bowl.

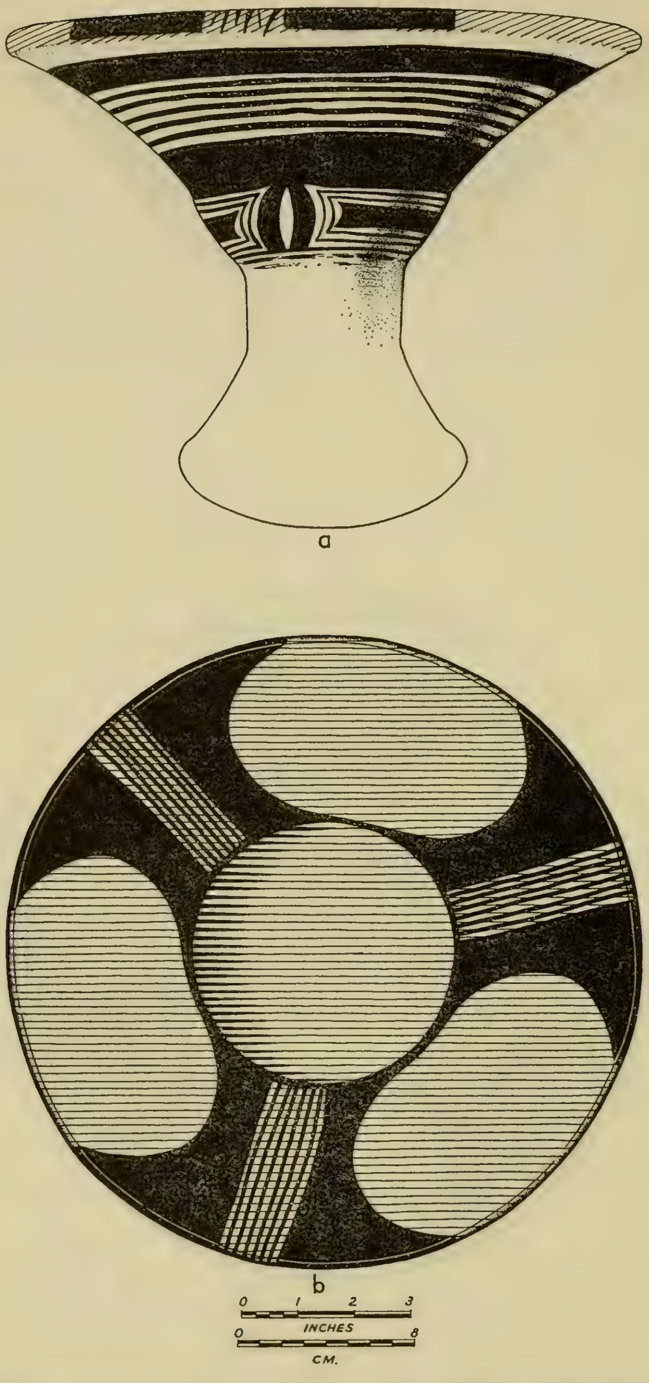
a
b
0
1
2
3
INCHES
0
8
CM.

Figure 52.—Restored Taboguilla black and white decorated pedestal base bowl.

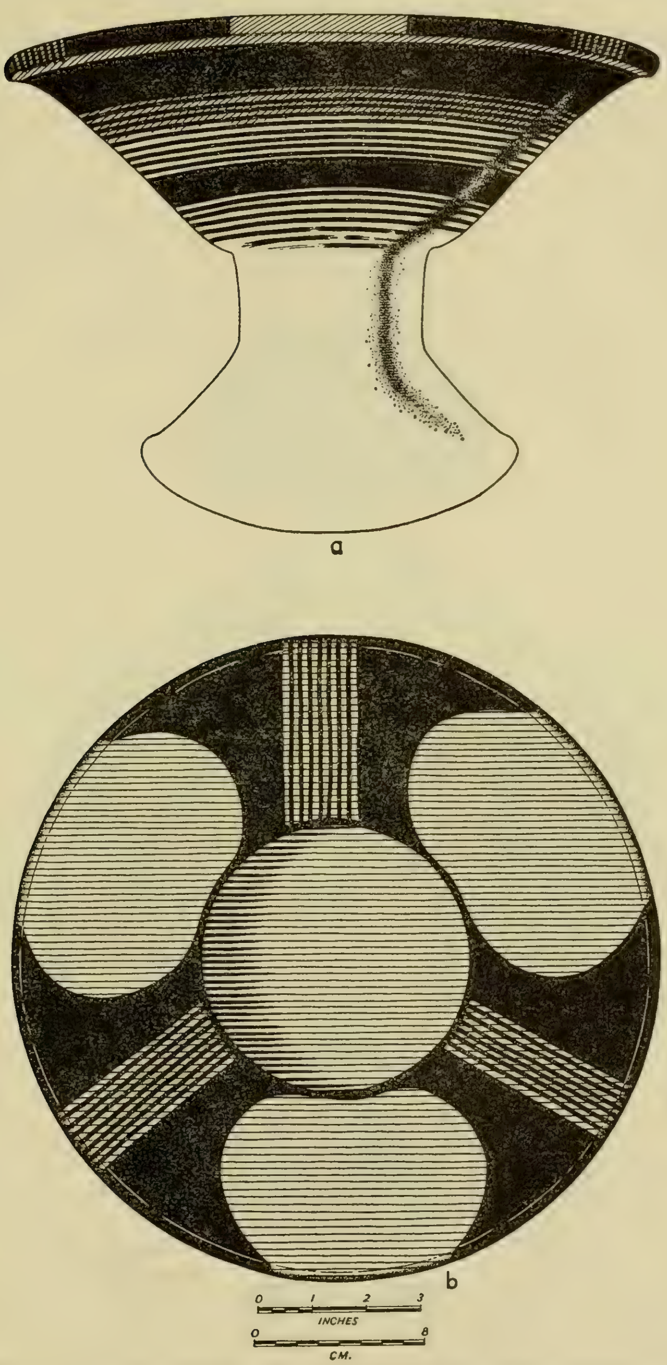
a
b
0
1
2
3
INCHES
0
8
CM.

Figure 53.—Restored Taboguilla black and white decorated pedestal base bowl.

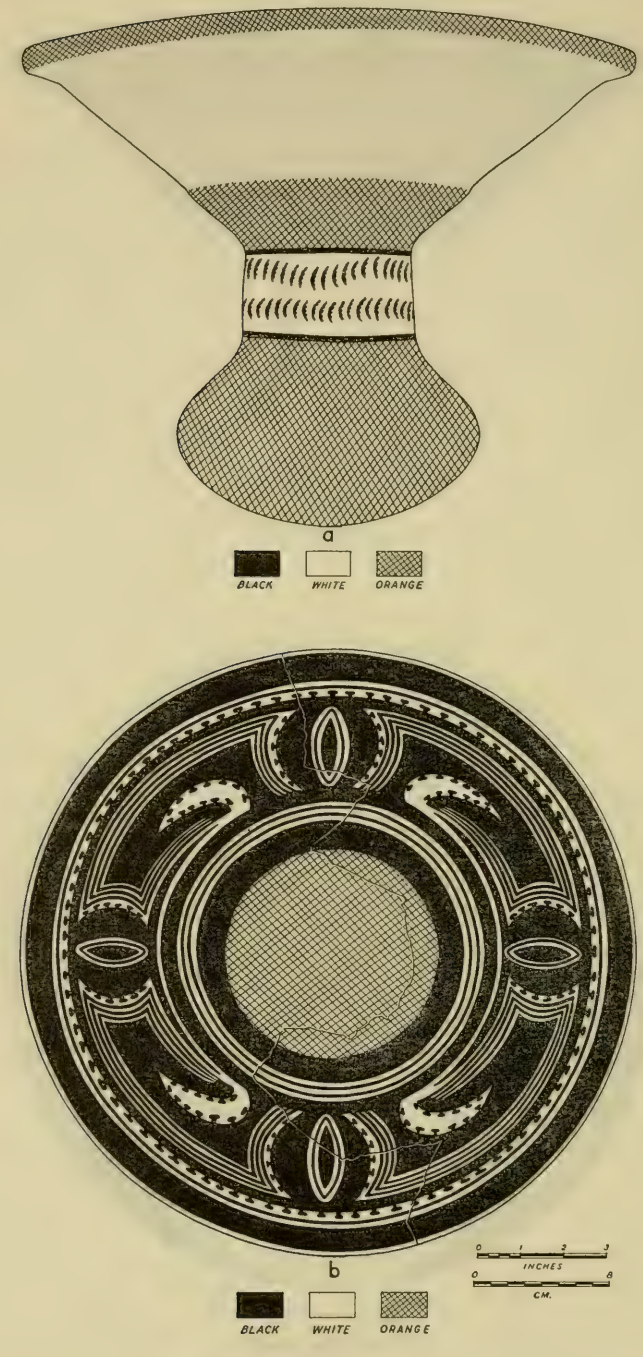
a
BLACK
WHITE
ORANGE
b
0 1 2 3
INCHES
0 8
CM.
BLACK
WHITE
ORANGE

Figure 54.—Restored Taboguilla pedestal base bowl decorated with orange, black, and white.

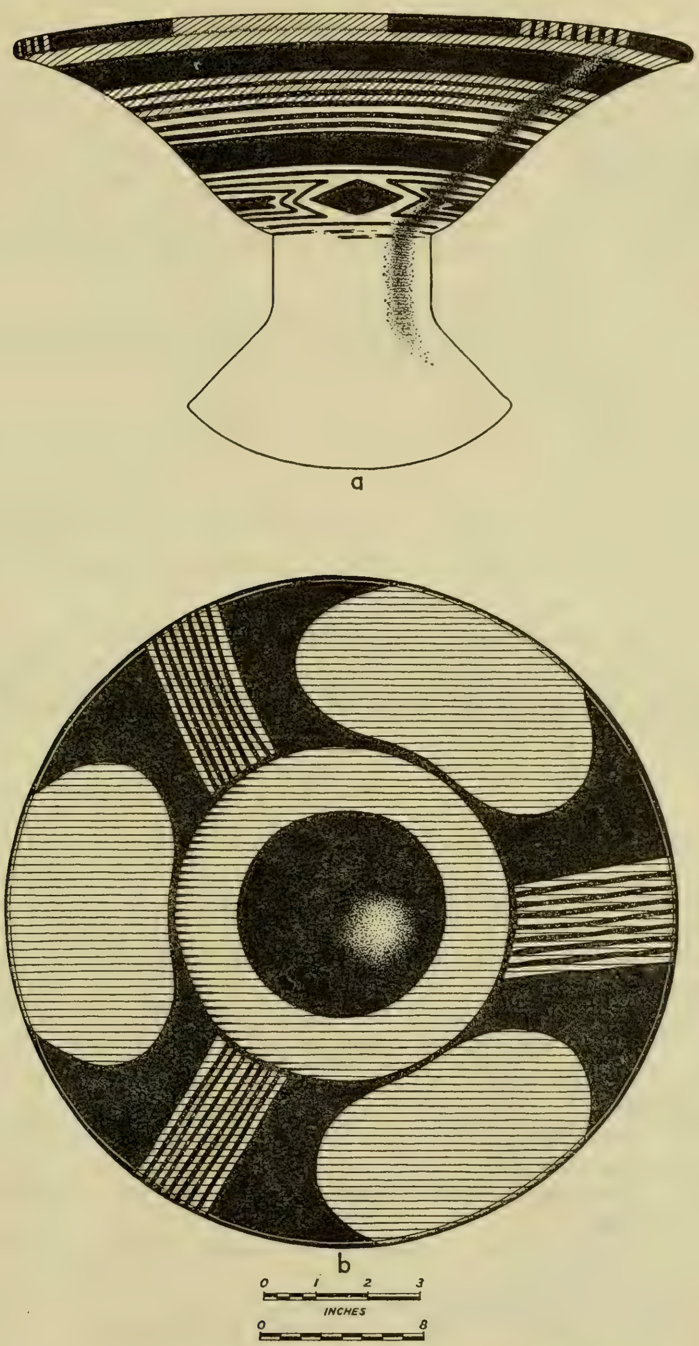
a
b
0 1 2 3
INCHES
0 8
CM.

FIGURE 55.—Restored Taboguilla pedestal base bowl decorated in black and white.

## TABOGUILLA–3

Taboguilla–3 was a rock shelter which had been used for burial purposes. Fragments of long bone shafts pertained to at least five individuals. One was an infant, another a child, and the rest were probably adults. Also present were two right maxillary and three mandible fragments, an almost complete mandible and seven loose teeth, a right mastoid process of an adult and another of a child. There were two fragments of a skull vault.

The majority of the pottery consisted of sherds belonging to large unpainted buff ollas. There were, however, a variety of decorated sherds from smaller vessels.

Painting consisted of black-on-white, black-on-red, or plain red or orange.

There was some incised ware and both plain and indented filleting. One unique sherd indicated that the vessel had been wrapped with a fiber string and then painted white, thus producing a negative design where the cord had been (pl. 84, *f*).

As already stated, one of the two shell artifacts that we found on Taboguilla consisted of the replica of a jaguar canine, perforated laterally at the middle as though it had been one of a necklace of similar objects (pl. 65, *f*).

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## EXPLANATION OF PLATES

### PLATE 45

*Rim sherds from large vessels; Taboga–1*

*a*, Smooth buff, grit tempered brown core; trench 2, 12–24 inches.

*b*, Smooth buff, grit tempered brown core; trench 1, 12–24 inches.

*c*, Smooth buff, grit tempered brown core; trench 1, general.

*d*, Buff slip on exterior and interior, red painted lip, grit tempered brown core; trench 2, 0–12 inches.

*e*, Smooth buff, grit tempered buff core; trench 2, 0–12 inches.

*f*, Smooth buff, grit tempered buff core; trench 1, 12–24 inches.

*g*, Smooth buff, grit tempered buff core; trench 2, 12–24 inches.

*h*, Red-slipped exterior, grit tempered, reddish brown core; trench 1, 12–24 inches.

*i*, Plain buff, grit tempered light brown core; trench 1, 0–12 inches.

*j*, Buff-slipped interior, scallop combed neck, red-painted lip, grit tempered light buff core; trench 2, 12–24 inches.

*k*, Slipped buff (or orange slipped ?), grit tempered, painted lip, buff core; trench 1, general.

*l*, Smooth buff, grit tempered, narrow gray core with buff margins; trench 2, 0–12 inches.

### PLATE 46

*Miscellaneous sherds; Taboga–1*

*a*, Exterior painted white on buff with red band under rim; interior red painted; deep groove around lip; gray core, reddish brown margins; trench 1, 12–24 inches.

*b*, Interior slipped red, exterior smooth buff; paste fired buff on exterior margin, interior margin gray; trench 2, 0–12 inches.

*c*, Same as *b*; trench 2, 0–12 inches.

*d*, White exterior, scallop combed neck; interior painted red, well polished, red paint extends over the rim; core fired white; trench 2, 12–24 inches.

*e*, Light buff with splotches of pink; combed exterior with incised design, interior smooth, core fired pinkish buff; trench 2, 24–36 inches.

*f*, Red painted interior, paint extends over lip to form a band on rim exterior; exterior polished buff; reddish brown core; hole drilled near rim; trench 1, 0–12 inches.

*g*, Red painted interior, exterior buff, smooth; reddish brown core; two holes punched 11 mm. apart; trench 2, 0–12 inches.

*h*, Black-on-red with incised and punctate design; exterior painted red, interior plain buff; three black lines painted vertically on rim; punctated zone, polished buff; reddish brown core; trench 1.

*i*, Zoned red-on-buff; narrow zones slipped buff; interior unpainted, unslipped; reddish brown core; trench 2, 24–36 inches.

*j*, Zoned red-on-buff with deep punctations; red zones smooth; brown core; trench 2, 24–26 inches.

*k*, Orifice of bottle necked jar, plain buff, rough interior and exterior; flat lip painted red; pinkish buff paste; trench 2, 24–36 inches.

*l*, Red painted interior, buff exterior; deep groove around lip; dark gray paste; trench 2, 0–12 inches.

*m*, Zoned buff-on-red; narrow buff zones unpainted; exterior coated with carbon; interior unslipped, unpainted; brown core; trench 2, 0–12 inches.

## PLATE 47

*Painted sherds; Taboga–1*

*a*, Red painted exterior, zoned areas in buff; vertical zoned area outlined by two incised lines; top of zoned area not outlined; interior, buff, unslipped; fine grit tempered buff core; trench 2, 12–24 inches.

*b*, Exterior, zoned red-and-black, interior red; deep groove around lip; brown paste; trench 2, 12–24 inches.

*c*, Red painted rim, red slipped interior; exterior polished buff; brown paste; trench 2, 24–36 inches.

*d*, Exterior buff-slipped with red painted design; interior, unslipped buff; gray core with buff margins; trench 2, 24–36 inches.

*e*, Red slipped interior and exterior; fine black vertical lines (2 mm. wide) on interior; reddish brown paste; trench 2, 12–24 inches.

*f*, Zoned red-and-white exterior, red interior; brown paste; trench 2, 12–24 inches.

*g*, Zoned black-on-white-on-red exterior; lip of rim painted white; two black lines painted parallel to zoning incision on white; interior of neck painted red, rest of interior unpainted, unslipped buff; exterior margin and core brownish red.

*h*, Red slipped interior and exterior; elongate punctations inside of neck on buff band, but not zoned with incising; buff paste; trench 2, 12–24 inches.

*i*, Zoned red-on-buff, buff surface slipped; interior, unslipped buff; buff paste; trench 1, 12–24 inches.

*j*, Thin ware; zoned red-on-buff; narrow buff zones unpainted; interior unslipped buff; reddish brown core; trench 1, 12–24 inches.

*k*, Red-on-white; interior slipped white 10YR 8/1, painted with red vertical lines 5 mm. wide; interior of rim painted red; exterior, smooth buff; light brown paste; trench 2, 12–24 inches.

*l*, Black-on-red-on-white; white 10YR 9/4 design, red triangle outlined in black; lip painted red; interior unpainted, unslipped; brick red paste; trench 1, 24–36 inches.

## PLATE 48

*Various zoned designs; Taboga–1*

*a*, Zoned red-on-black-on-buff; from top to bottom the bands are red, black, buff, black, buff; punctate zone, buff; interior rough buff; trench 1.

*b*, Well polished, zoned red-and-white exterior, interior red; deep groove in lip; small nodule on rim; trench 2, 12–24 inches.

*c*, Red-on-buff; punctate zone buff, red area polished; interior, rough buff; trench 1.

*d*, Zoned red-and-black-on-buff; from top to bottom the bands are red, black, buff, black; elongated punctations in buff band; trench 1.

*e*, Red-on-buff; punctate zone unpolished buff, red area polished; interior red and well smoothed; trench 1, 12–24 inches.

*f*, Zoned red-on-buff; from left to right the bands are buff, red, buff, red; the ware is quite thin, 5 mm.; trench 2, 12–24 inches.

*g*, Zoned brown-on-red; it is possible that the zoned areas were originally black; interior rough buff; end of zoned areas not closed; trench 2, 12–24 inches.

*h*, Zoned red-and-black-on-buff; from top to bottom the bands are black, buff, black, red; the ware is quite thick, 14 mm.; trench 2, 12–24 inches.

*i*, Zoned red-on-buff; the red zone is polished, the buff zones unpolished but smooth; interior rough; trench 1, 24–36 inches.

*j*, Zoned brown-on-red, interior rough buff; the brown areas may once have been black; this sherd was coated with carbon on the exterior; trench 1, 12–24 inches,

## PLATE 49

*Miscellaneous sherds; Taboga–1*

*a*, Subglobular vessel with small orifice; smooth red painted exterior; rough unslipped interior; brown paste; trench 2, 12–24 inches, 10R 4/10.

*b*, Portion of large pedestal base; exterior zoned black-on-red, with punctated buff zones; rim red, indented area buff; interior rough buff; buff paste; trench 2, 12–24 inches.

*c*, White interior and exterior; interior smooth, exterior combed; rim painted red; white paste; trench 2, 24–36 inches.

*d*, Buff slipped interior and exterior; red painted lip; buff paste; trench 2, 24–36 inches.

*e*, Buff interior and exterior; exterior of neck rough, interior smooth; rim painted red; buff paste; trench 2, 24–36 inches.

*f*, Subglobular buff jar with small orifice, incised and dentate design; buff paste; hole drilled near the orifice; thin ware; trench 1.

*g*, Rough buff exterior, red painted interior with red paint extending over the rim; brown paste; trench 2, 0–12 inches.

## PLATE 50

*Pedestal and ring bases; Taboga–1*

*a*, Smooth red painted exterior, rough buff interior; black core with buff margins; 11 cm. high and 44 mm. in diameter; trench 1, 0–12 inches.

*b*, Black-and-white-on-orange; the broad dark bands are orange; the narrow bands are black; rough interior; brown paste; 42 mm. in diameter; trench 2, 12–24 inches.

*c*, Smooth red painted exterior, rough interior; the interior of the bowl surmounting the base was also red; reddish brown paste; 45 mm. in diameter; trench 1, 12–24 inches.

*d*, Modified pedestal base; rough unpainted exterior and interior; base 22 mm. high; buff paste; trench 2, 12–24 inches.

*e*, Modified pedestal base; rough buff interior and exterior; base 17 mm. high; trench 1, 12–24 inches.

*f*, Flaring pedestal base; orange slipped, rather rough exterior, buff interior; the interior of the bowl surmounting the base was painted red; gray core fired orange on exterior margin; trench 2, 0–12 inches.

*g*, Modified pedestal base; plain buff exterior and interior; the interior of the bowl was smooth and painted red; buff paste; base 25 mm. high; trench 1, 0–12 inches.

*h*, Modified pedestal base; rough buff exterior and interior; interior of bowl smooth; 30 mm. high; buff paste; trench 2, 0–12 inches.

*i*, Ring base; buff slip interior and exterior; buff paste; 1 cm. high; trench 2, 0–12 inches.

## PLATE 51

### *Taboga stonework*

*a*, Crude ax of fine grained basalt; trench 1.
*b*, Polished ax of blue-gray rhyolite; trench 1, 0–12 inches.
*c*, Ax fragments of rhyolite; trench 2, 0–12 inches.
*d*, Ax fragments of rhyolite; trench 2, 12–24 inches.
*e*, Gray diorite ball; trench 2, 12–24 inches.
*f*, Bird effigy of tuff; trench 2, 12–24 inches.
*g*, Gray diorite ball; trench 1.
*h*, Crude diorite ax; trench 1, 24–36 inches.
*i*, Crude diorite ax; trench 2, 12–24 inches.
*j*, Flat, flaked disk of blue chert; trench 2, 12–24 inches.

## PLATE 52

### *Taboga and Taboguilla stone and shell*

*a–c*, Taboguilla–1; axes of blue rhyolite; *a* is unique in that it has a sharp cutting edge on both ends; trench 2, 0–12 inches.
*d*, Taboguilla–1; sharp edged flake of rhyolite; trench 2, 0–12 inches.
*e*, Taboguilla–1; heavy solid shell cylinder.
*f*, Taboguilla–3; laterally perforated imitation jaguar canine of shell, these two specimens (*e* and *f*) were the only shell artifacts found on either Taboga or Taboguilla.
*g*, Taboga–1; small rhyolite celt; trench 2, 0–12 inches.
*h*, Taboga–1; arrowhead of yellow jasper; trench 2, 0–12 inches
*i*, Taboga–1; arrowhead of red and yellow jasper; trench 2, 12–24 inches.
*j*, Taboga–1; flake of yellow jasper; trench 2, 12–24 inches.
*k*, Taboga–1; incised sherd of Utivé type found back of the sandspit. This was the only Utivé sherd found on the islands. It was not associated with a particular site.

## PLATE 53

### *Miscellaneous sherds; Taboga–4*

*a*, Red slipped exterior, black on buff interior; fine grit temper; outside margin of core black, inside margin light buff.
*b*, Red-and-black-on-buff; broad band outlined by buff is red, remainder of painted design, black; grit tempered, core black; both margins buff.
*c*, Red slipped interior and exterior, black stripes on interior only, grit tempered, light buff core.
*d*, Red-and-black-on-buff exterior only, interior unslipped; grit tempered, buff core, gray margins.
*e*, Black-on-buff, exterior only; grit tempered, light buff core.
*f*, Red painted interior, lip and exterior buff except for broad groove under lip which is red painted; fine grit temper; inner margin black, outer margin buff.
*g*, Black-and-red-on-buff exterior; interior buff, unslipped; fine grit tempered, light buff core.
*h*, Exterior and interior painted red, lip black-on-buff; grit tempered, buff core.
*i*, Red painted exterior and interior, lip unpainted buff; grit tempered, buff core.
*j*, Red painted interior and exterior; black horizontal stripes on interior; grit tempered, light reddish brown core.
*k*, Lamellar flake of yellow flint.

## PLATE 54

*Rim sherds; Taboga-4*

*a*, Smooth red painted interior and exterior; uniform brownish red grit tempered core.
*b*, Red painted lip, otherwise unpainted, unslipped; combed neck, uniform light buff grit tempered core.
*c*, Smooth red painted interior and exterior; light brown grit tempered core.
*d*, Buff slip, combed neck; uniform light buff, grit tempered core.
*e*, Interior buff slipped, exterior unslipped; grit tempered light brown core.
*f*, Buff color, smooth interior, combed neck; uniform buff grit tempered core.
*g*, Orange slipped exterior, unslipped interior; uniform grit tempered buff core.
*h*, Red painted lip, buff slipped interior, combed neck; light buff grit tempered core.
*i*, Same description as *h*.
*j*, Interior buff slipped, neck combed; grit tempered light brown core.

## PLATE 55

*Urabá urns*

Large urns of buff or brick red ware, offerings in rock shelter burial on Urabá. Not to scale. The vessels vary from 30 to 40 cm. in height.

## PLATE 56

*Urabá urns*

Large urns of buff or brick red ware, offerings in rock shelter burial on Urabá. Not to scale. The vessels vary in height from 30 to 40 cm.

## PLATE 57

*a*, Offertory in rock shelter on Urabá.
*b*, Site of Taboguilla-1, on Taboguilla Island, looking toward the mainland of Panama.

## PLATE 58

*Bold incising*

These vessels seem typically to have been of subglobular shape and rather large with wide outflaring rim (see pl. 60, *a*). The incising is usually combined with both horizontal and vertical scallop indented filleting.

The paste has a wide black core, with narrow dark buff or brown margins. It is medium tempered. The exteriors were carelessly smoothed before incising. Sometimes the surface was lightly combed, as in *b*. The exteriors are unpainted and slightly rough, often carbonized. Many retain the earth color of grayish brown, as earth adheres to the slightly rough surface and is difficult to remove. The inner surfaces are polished brown. Small particles of mica show on the surface. The bases are generally polished.

## PLATE 59

*Combing and incising*

*a*, Narrow line combing, scallop indented fillet around neck; plain buff ware.
*b*, Incised red.

*c–f, i–k, m,* Incised buff ware.
*g,* Buff incised exterior, red interior.
*h,* Exterior incised, buff and red; interior red.
*l,* Exterior incised red, interior buff.
Light horizontal combing on vessels before incising is apparent on *a, e, f, k, l, m.*

## PLATE 60

### *Incised ware*

*a,* Large olla rim, orange slip on lip and interior, vertical appliqued fillet with scallop indentations; brown exterior.
*b,* Orange slip interior and exterior.
*c, f,* Thick unpainted light buff ware.
*d,* Thin light buff ware, orange lip; scallop indented fillet at base.
*e,* Orange exterior and interior.
*g,* Brown exterior, red lip and interior.
*h,* Orange interior and exterior.
*i, j, k,* Unpainted buff ware.

## PLATE 61

### *Various rim decorations*

*a, c–k,* Red slipped ware.
*a, c, d, f, i,* Black on red paint.
*b,* Buff with rim painted red on interior.
*k,* Red on light buff.
*l, m,* Wavy combing over horizontal combing; brown ware.

## PLATE 62

### *Narrow line combing*

*c,* Pecten incised decoration near rim.
*i,* Globular bowl, red slipped interior and exterior, fire blackened; decorated with two horizontal or concentric narrow line combed elements.

All of the remainder are unpainted buff ware jars with vertical narrow line combed elements, some with additional raised applique ornaments. In some instances the vertical combing is superimposed over lighter horizontal combing. On some parts of sherds (*a, c, f, h*), the buff paste has fired red.

## PLATE 63

### *Combed ware*

*a, b, e,* Thick brown ware; unpainted with multiple line combing.
The remaining pieces show variations of narrow line combing techniques.
*c, l,* Brown ware.
*d, g–k,* Buff ware.
*f,* Red interior and exterior.

## PLATE 64

### *Fragments of globular bowls decorated with combed designs*

*a,* Globular bowl, orange slip inside and out, lower part blackened by firing; five concentric two-line semicircles decorate side.

*b*, Globular bowl, orange slip inside and out, lower part blackened by firing; decorated with three concentric narrow line combed semicircles.
*c*, Globular bowl, light buff slip outside with combed decoration; orange slip inside.
*d*, Globular bowl, orange slip outside, combed decoration; inside plain buff; fire blackened exterior.
*e*, Globular bowl, orange slip inside and out, exterior fire blackened; decorated with three concentric narrow line combed semicircles.
*f*, Globular bowl, orange slipped interior and exterior; exterior fire blackened; decorated with two double line combed concentric semicircles.
*g*, Globular bowls, orange slip inside and out; exterior fire blackened; decorated with four double line combed concentric semicircles.

## PLATE 65

### *Multiple line combing*

*a*, Buff exterior; orange slip on interior.
*b*, Globular vessel with red slip exterior and interior.
*c*, *f*, Buff exterior, smooth black interior.
*d*, *e*, *g*, Buff interior and exterior.
*h–k*, Light buff interior and exterior.

## PLATE 66

### *Scallop impressions*

*a*, *c*, *e*, *g*, *l*, Unpainted light buff exterior with scallop impressions over light combing; orange slip on interior.
*b*, *d*, *k*, Unpainted light buff interior and exterior; scallop impressions.
*f*, *h*, *i*, *j*, White on orange exterior, light buff interior; scallop impressions on the white zone only. These are probably sherds of the bases of pedestal supports.

## PLATE 67

### *Filleting on combed surface*

Sherds of large unpainted ollas. Where the parallel fillets are notched, the notching was done simultaneously with an edged tool.
*a*, Buff interior, brown exterior.
*b–j*, Light buff interior and exterior.

## PLATE 68

### *Filleted ware*

*a*, Applique lizard or alligator on large unpainted olla; notched filleting; light buff interior and exterior.
*b*, *h*, *i*, Buff interior and exterior.
*e*, Orange and buff exterior; interior red; combing and filleting.
*f*, Red exterior.

## PLATE 69

### *Subglobular bowls with scallop indented filleting*

*a*, Orange.
*b–i*, Red.

## PLATE 70

### *Collanders*

The holes were punched from the outside to the inside while the clay was plastic. In some instances the interior was permitted to remain rough; in others the interiors were smoothed after the punching.

*b, f,* Side and bottom sherds from the same vessel, a straight sided jar with outflaring rim and slightly rounded bottom; exterior painted black on white; interior orange slipped; good quality ware.

*g,* The vessel was probably similar in form to *f*; exterior painted red on black; bottom polished buff and the interior is orange over buff.

The remainder of the sherds are of unpainted buff ware. Several retain the gray color of the soil which clings to the slightly rough surface and is difficult to wash away.

## PLATE 71

### *Sherds with bossed decorations*

*a, c, d,* Sherds from subglobular bowl; red exterior and lip; buff interior with horizontal combing; bossed decoration on exterior; horizontal strap handles, round on outer surface, flat on the inside.

*b,* Unpainted buff ware, bosses appliqued on exterior.

*e, f,* Buff ware, combed surface with bosses.

*g,* Brown ware, combed shoulder with bosses, smooth base.

*h,* Red exterior and interior, bossed decoration.

*i–k,* Thin hard ware, orange slip inside and out, bosses on exterior.

Note: *a, c, d,* are all sherds from the same vessel, but each shows a different color. The color was intended to be red but the handle section of *a* and the surface of *d* were burned to a brown shade. *a* and *c* show a buff interior while, as a result of less erosion, the interior of *d* is red. This point is stressed to emphasize the fact that color determinations do not always mean too much as variations are brought about by several factors.

## PLATE 72

### *Broad flat rims of subglobular bowls*

These are all of a characteristic fine-grained hard paste of a light yellowish buff color. Some have some combing on the interior and on or under the rims. Sherds exhibiting this combination of form and ware are abundant and constitute one of the diagnostic types of the site.

## PLATE 73

### *Subglobular bowls with strap handles*

The handles are usually horizontal; only one was vertical. All of this ware has the same shape and rim form and all is orange slipped, fired to brown in some places. Commonly it is decorated with scallop indented filleting (*c, f*).

## PLATE 74

### *Rim sherds of flat shallow plates*

The unincised portions of the rims and bases have an orange slip. The areas with squiggled incising are buff. The ware is hard and the paste fine grained. (See pl. 75 for interiors.)

## PLATE 75

*Interior of rim sherds shown on plate 74*

*a, b, c, e,* Black-on-red.
*d, f,* Black-on-white.
*g,* Red-and-black-on-buff.

## PLATE 76

*Miscellaneous painted sherds*

*a,* White-on-orange exterior and interior; interior carbonized.
*b, d,* Orange-and-white exterior, buff interior.
*c,* Black and brick red on white interior, orange exterior.
*e, f, h,* Black-and-red-on-white exterior, buff interior.
*g,* Orange-and-white exterior, buff interior.
*i,* Red on light buff exterior, light buff interior.
*j,* Black, orange, and white exterior; buff interior.

## PLATE 77

*Black-on-orange-and-black outlined by white-on-orange*

*a, d, e, g,* Unpainted buff interior.
*b, f,* Orange interior
*c,* Black-on-orange interior.
*h, i, j,* The painting is repeated on both sides.

## PLATE 78

*Black-and-white-on-orange pedestal base bowl sherds*

*a, b, c, e, g,* Black-on-orange interiors.
*d,* Unpainted buff interior globular bowl.
*f,* Plain orange exterior.

## PLATE 79

*Pedestal base bowl sherds (reverse of plate 78)*

*a, g,* Black-on-white-and-orange exterior.
*b, c,* Black-on-yellow-orange exterior (possibly due to weathering?). In *c* the black paint is directly on the orange and outlines the white line. In other cases the black is put on white as it has sometimes flaked off leaving white.
*d,* Black-on-white-and-orange globular bowl, exterior.
*e,* Black-on-orange exterior.
*f.* Black-on-white-and-orange interior.

## PLATE 80

*Pedestal base bowl sherds*

Interiors, black-on-white pedestal base bowls with orange lips. All have white slip on the exterior except *d,* which has an orange exterior.

## PLATE 81

*Sherds from black-and-white-on-orange globular bowls*

*a, c, d, f, j,* Unpainted buff interior, black-on-white exterior.
*i,* Black-on-orange interior, black-and-white-on-orange exterior.
The remainder have orange interiors, with black-and-white-on-orange exteriors.

## PLATE 82

*Miscellaneous black-on-white-and-orange sherds*

*a,* Orange lip, black on white design, exterior; interior, black on orange.
*b–h,* Black-on-white exterior.
*i, j,* Exterior unpainted combed buff area, orange painted lip and band; interior orange.

## PLATE 83

*Miscellaneous painted sherds*

*a,* Black, white, and orange interior, orange exterior; pedestal base ground down to ring base.
*b,* Narrow neck jar, white slip.
*c,* Black, white, and red bowl, exterior; buff interior.
*d,* Black and white, part of pedestal base.
*e,* Black and white interior, orange exterior.
*f,* Rim of large olla; buff and brown exterior, red and brown interior.
*g,* Orange and white.
*h,* Large olla rim; red interior and exterior.
*i,* Shallow bowl, orange-on-white interior, white exterior.
*j,* Orange lip; black-on-white interior, white exterior.

## PLATE 84

*Miscellaneous sherds from rock shelter near Taboguilla–1*

*a,* Crudely finished large olla, unpainted terra cotta.
*b,* Unpainted buff rim.
*c,* Incised, orange interior and exterior.
*d,* Black on white exterior, white interior, fine, hard paste.
*e,* Orange interior and exterior.
*f,* Black-and-white-on-buff exterior, buff interior. It appears as though the vessel might have been wrapped with a string or fiber and the white paint applied, thus producing a type of negative design by leaving narrow strips of the buff surface unpainted.
*g,* Orange interior and exterior.
*h,* Incised, buff interior and exterior.
*i,* Orange interior, buff exterior.
*j,* Orange interior, exterior white with orange lip.
*k,* Black on red exterior, red interior.
*l,* Buff interior and exterior, punctate designs.
*m,* Orange exterior and interior, indented filleting.
*n,* Buff interior and exterior, plain filleting.

## PLATE 85

*Filleted and scallop impressed ware*

*a, c,* Scallop indented filleting; orange inside and out; exterior *c,* burned black.
*b,* Punctate, buff unpainted pedestal support.
*d–f,* Plain filleting over brushed exterior; unpainted light buff.
*g–j,* Notched filleting over brushed unpainted exterior; *h,* orange interior; other interiors unpainted.
*k–l,* Plain fillet; *k,* unpainted light buff, *l,* orange inside and out.
*m,* Scallop impressed, unpainted

*n–o,* Unpainted, notched filleting.
*p,* Unpainted light buff scallop impressed shoulder.

## PLATE 86

*Miscellaneous sherds*

*a,* Unpainted exterior, narrow line combing over horizontal combing, orange slip interior.
*b–c,* Flat rim yellow buff bowl with combed or brushed exterior.
*d,* Orange rim with combing; interior unpainted.
*e,* Pedestal base, light buff smooth exterior, brushed interior.
*f,* Narrow line combing over brushed unpainted exterior; interior unpainted.
*g, h,* Broad line combed exterior; unpainted inside and out dark buff.
*i,* Incised exterior, smooth interior; orange inside and out.
*j,* Unpainted squiggled lines (see pl. 74); interior orange.
*k,* Thin ware composite silhouette; incised exterior burned black; interior smooth, buff.

## PLATE 87

*Miscellaneous sherds*

*a,* Black-on-orange, large rim with black triangle depending from lip on inside.
*b–c,* Black-on-red, inside and out, large rim.
*d,* Buff pedestal stand with slots; inside of bowl red.
*e–f,* Black-on-red bowl, inside orange.
*g,* Red lip, white on red exterior, inside red; plate rim.
*h,* Black-on-orange exterior; interior unpainted buff.
*i,* Buff collander.
*j,* Horizontal strap handle; unpainted buff.
*k,* Black-on-white bowl (the only black and white sherd from Taboguilla–2).

## PLATE 88

*Miscellaneous sherds*

*a,* Light buff, unslipped, shell indented and incised.
*b,* Orange slip, indented.
*c,* Orange slip inside and over rim; incised section unslipped.
*d,* Combed and indented, unslipped light buff.
*e,* Orange slip on outside; the lower part where the coiling has separated is pecten shell indented as though to make the coils adhere better.
*f,* Light buff, unslipped, roughly shell indented.
*g,* Orange slipped, interior dappled with small white spots like glaze.
*h,* Light buff, unslipped, incising over combing.
*i,* Orange slip, inside and over rim; vertical incising.
*j,* Light buff, unslipped, incising.
*k,* Light buff, unslipped, combing on interior, zoned incising exterior.

## PLATE 89

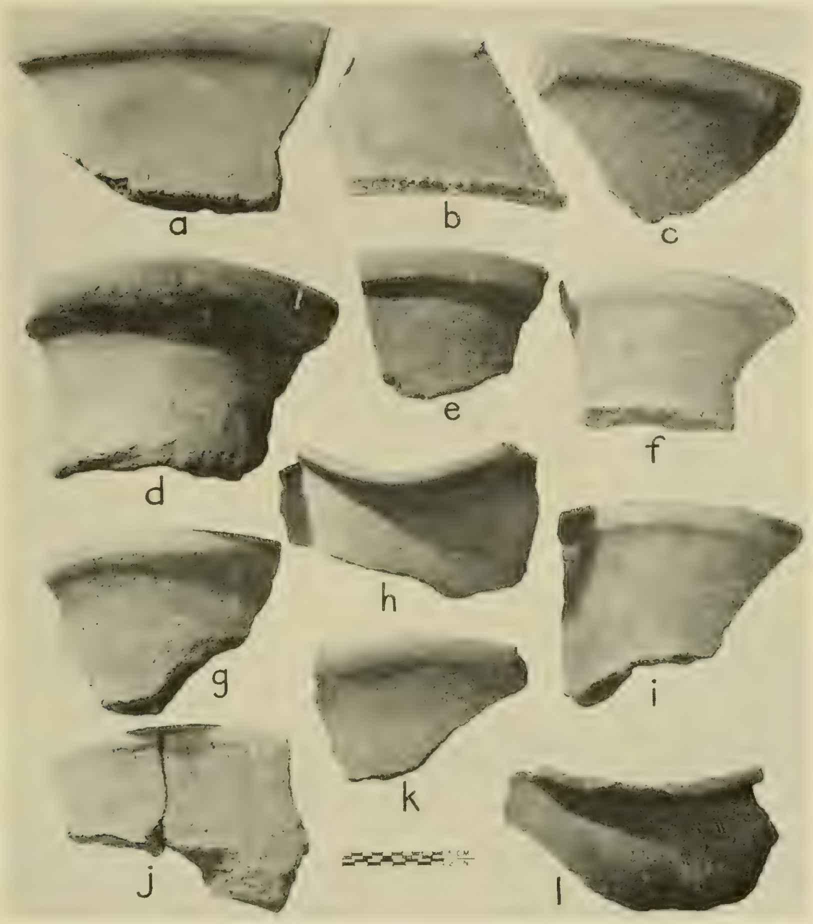
*Miscellaneous sherds*

*a,* Orange slip, inside and out; vertical indented filleting on outside.
*b,* Orange slip, inside and rim (lip).
*c,* Orange slip inside; outside unslipped.
*d,* Orange slip inside and out.

*e*, Light buff, smooth, unslipped.
*f*, Light buff, smooth, unslipped.
*g*, Incised, light buff, smooth, unslipped.
*h*, Incised, light buff, smooth, unslipped.
*i*, Zoned punctate, punctate, fillet light buff, unslipped.
*j*, Incised over combing, light buff, unslipped.
*k*, Punctate fillet, incised, unslipped light buff.
*l*, Incised and indented, orange slip.
*m*, Heavy incising, light buff, unslipped.
*n*, Indented fillet, light buff, unslipped.
*o*, Incising over combing, orange slip.
*p*, Herringbone incising, orange slip.
*q*, Zoned incising, light buff, unslipped; mica abundant in temper.
*r*, Orange slip inside and out.

## PLATE 90

*a*, *b*, Taboguilla-3. Rock shelter site on Taboguilla.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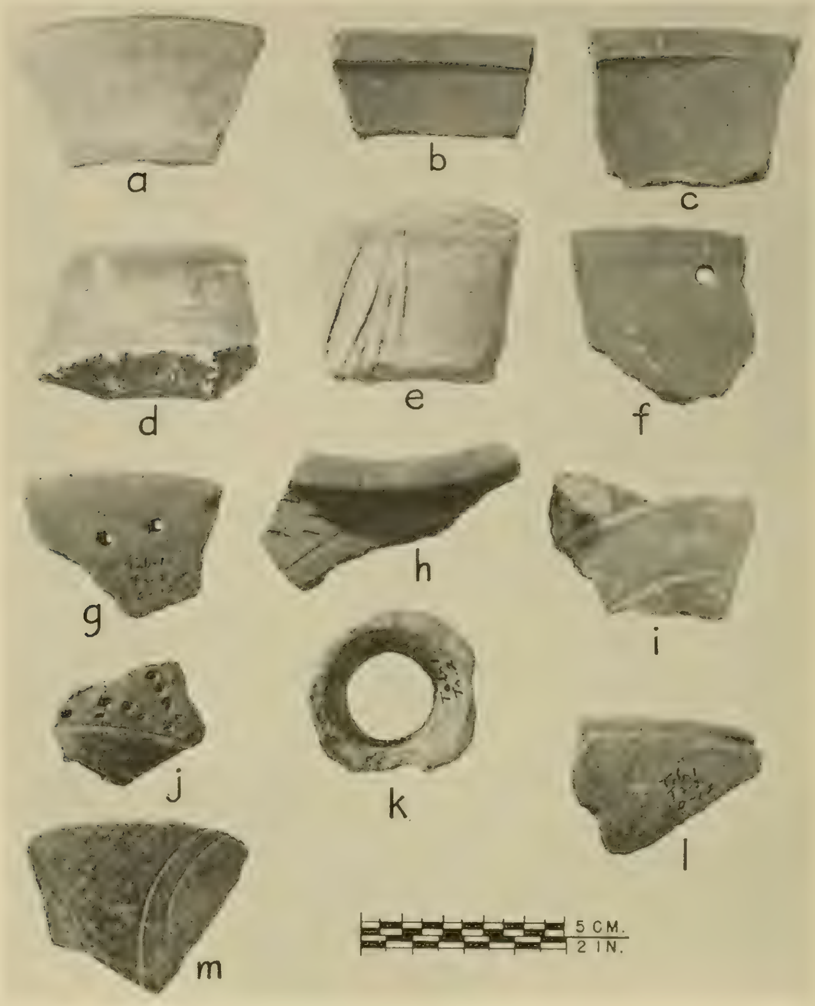
Rim sherds from large vessels; Taboga–1.

(For explanation, see p. 337.)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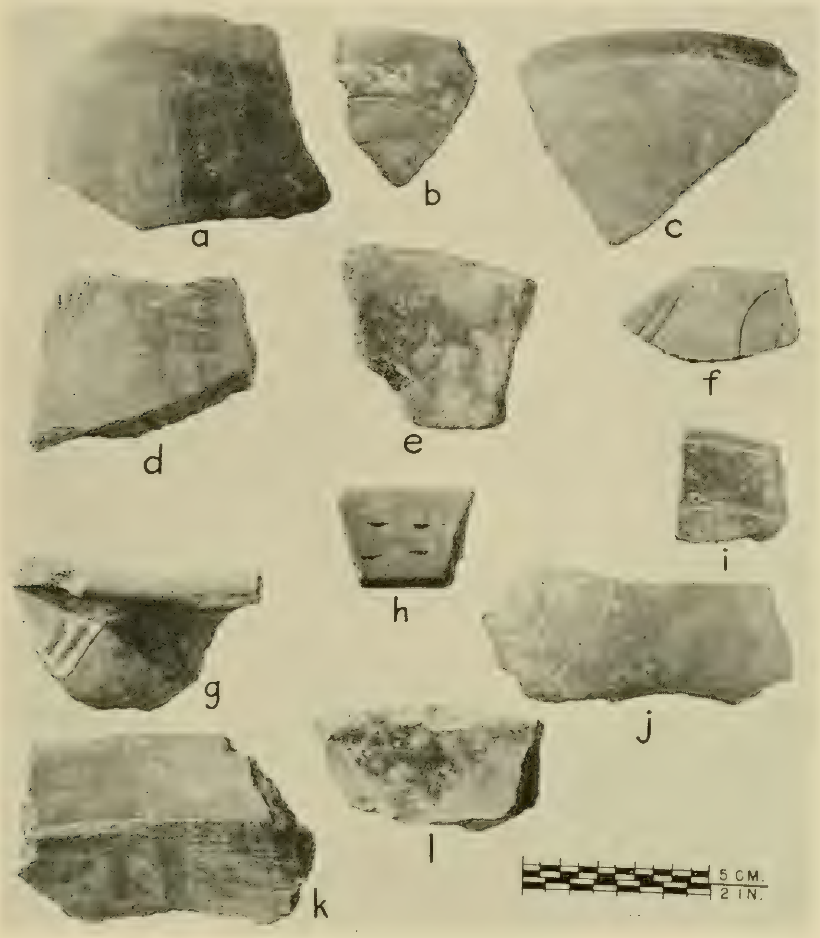
Miscellaneous sherds; Taboga–1.

(For explanation, see p. 337.)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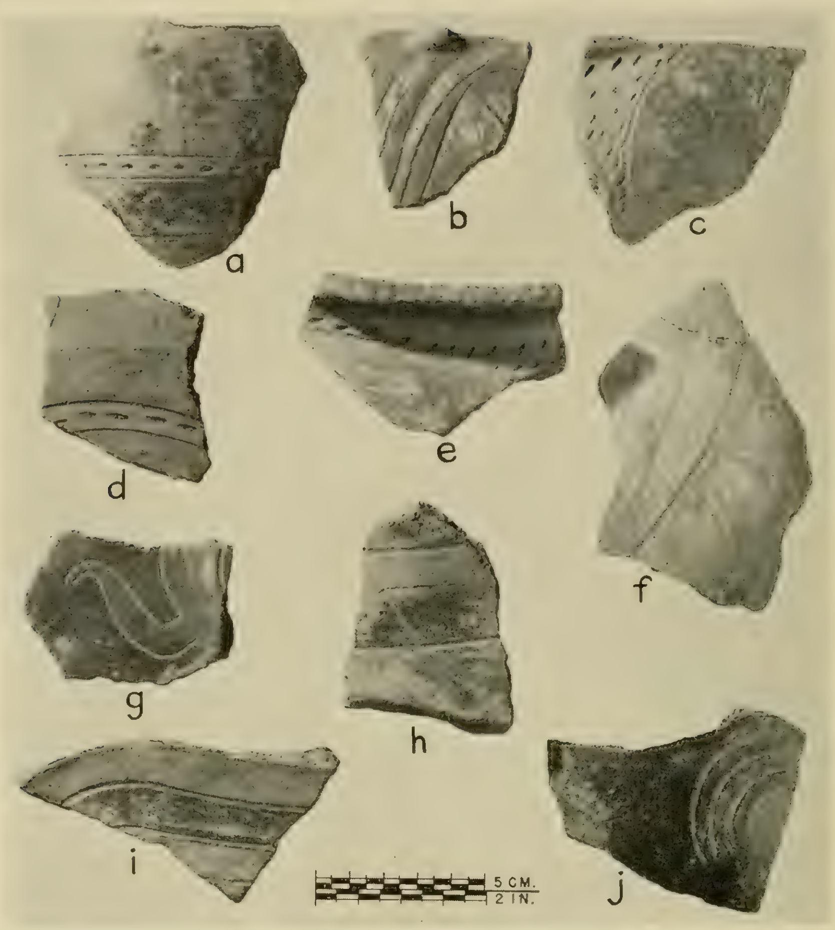
Painted sherds; Taboga-1.

(For explanation, see p. 338.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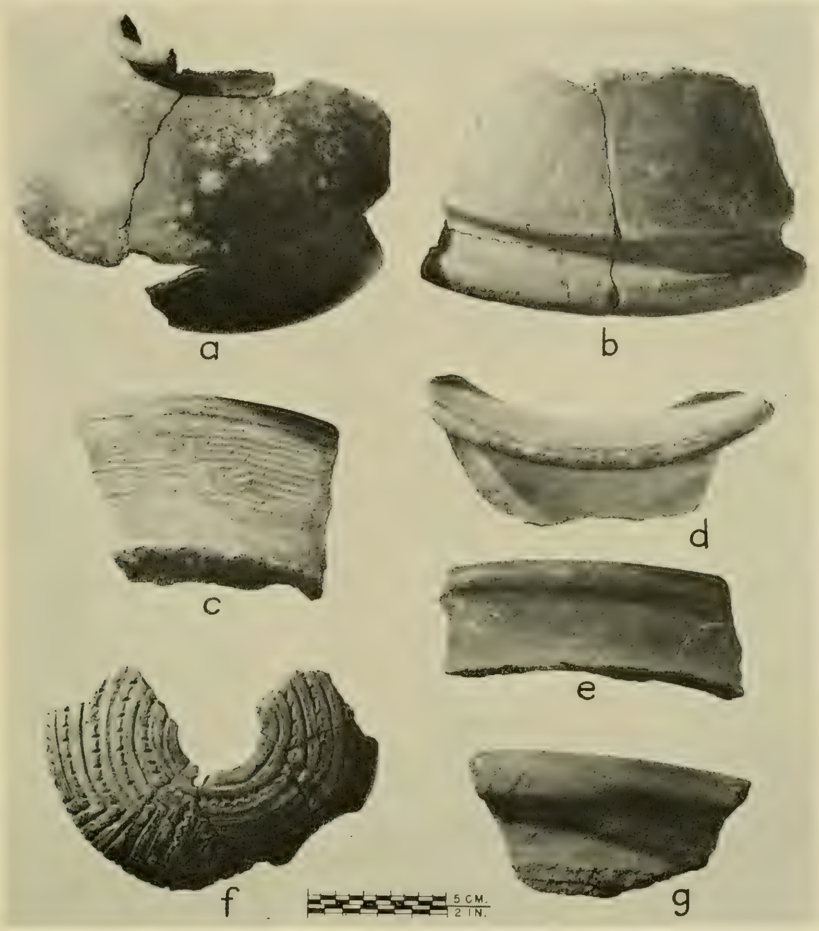
Various zoned designs; Taboga–1.

(For explanation, see pp. 338–339.)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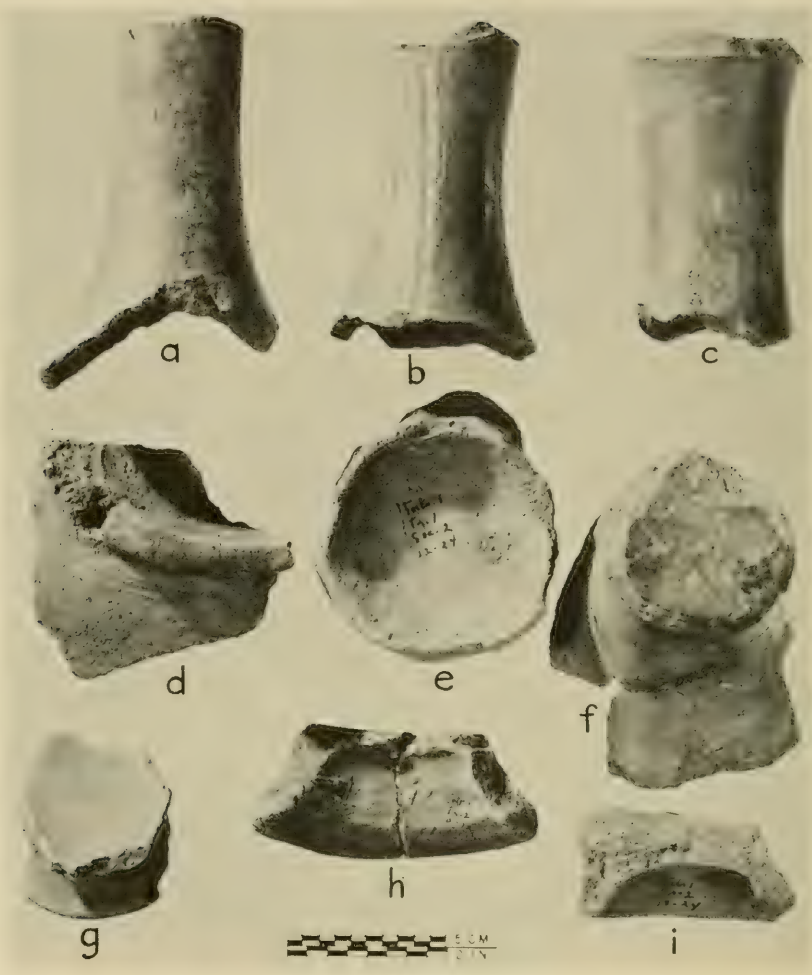
Miscellaneous sherds; Taboga-1.

(For explanation, see p. 339.)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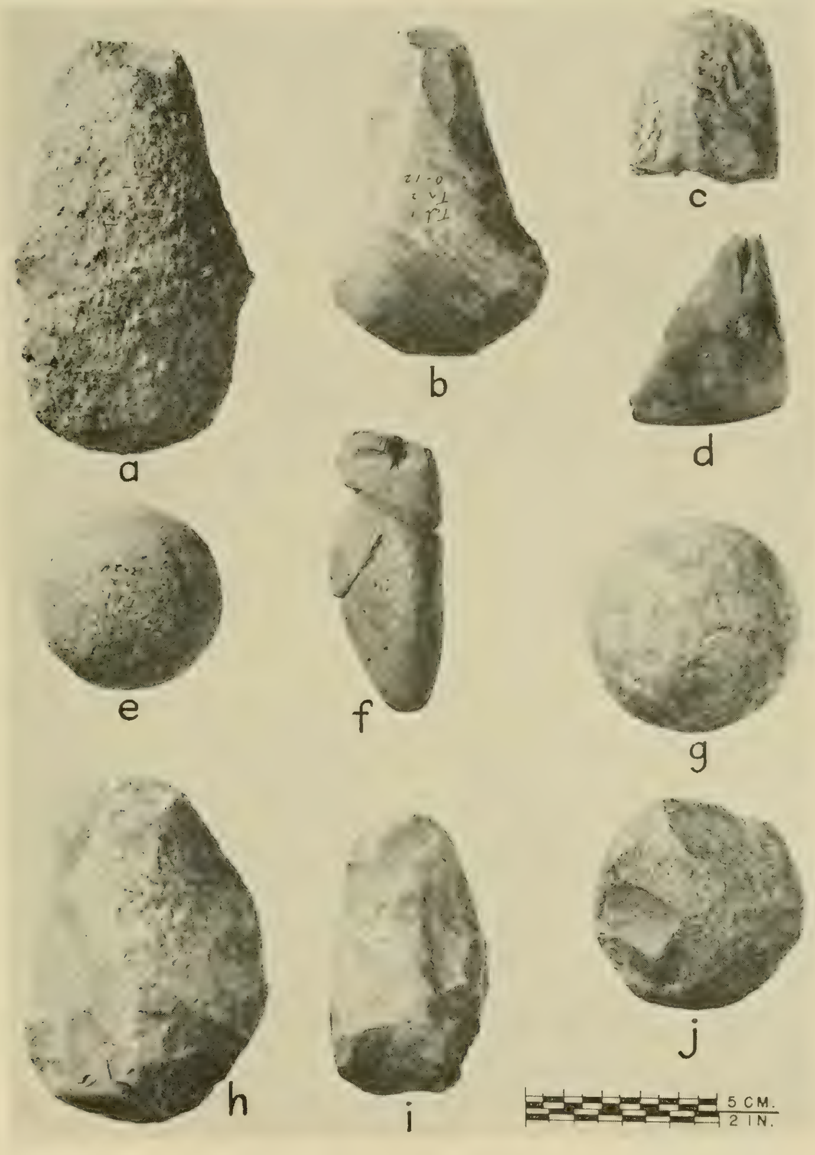
Pedestal and ring bases; Taboga–1.

(For explanation, see p. 339.)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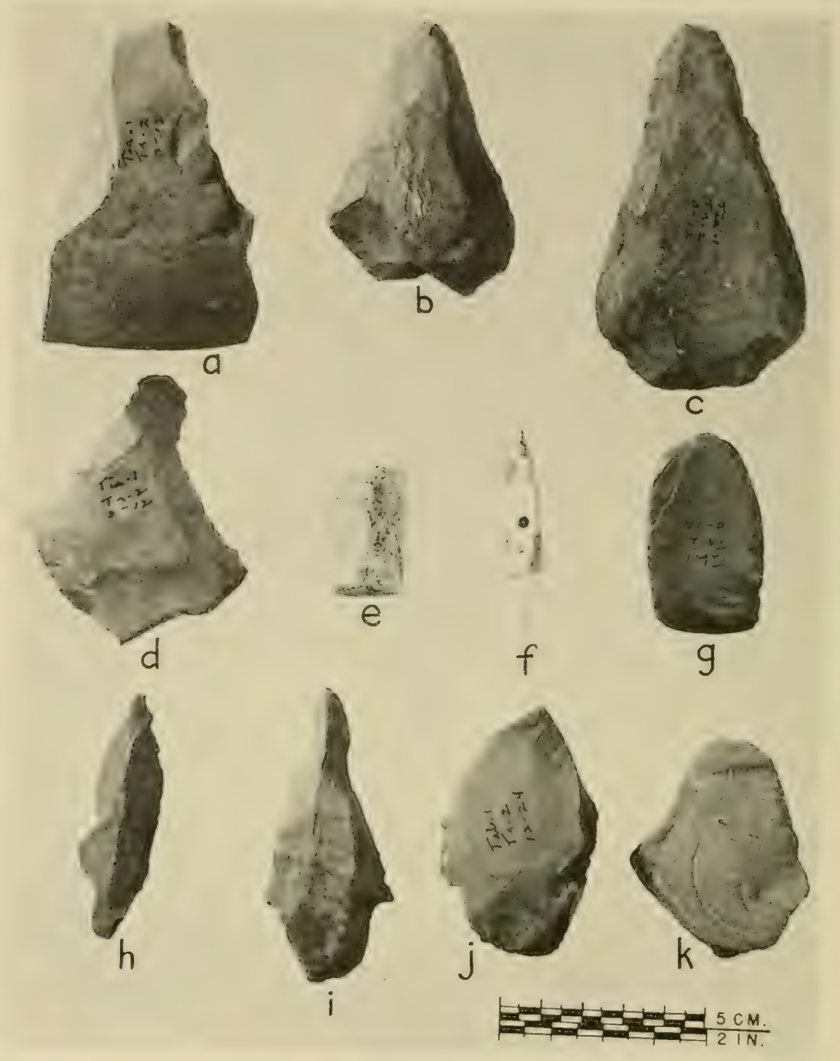
Taboga stonework.

(For explanation, see p. 340.)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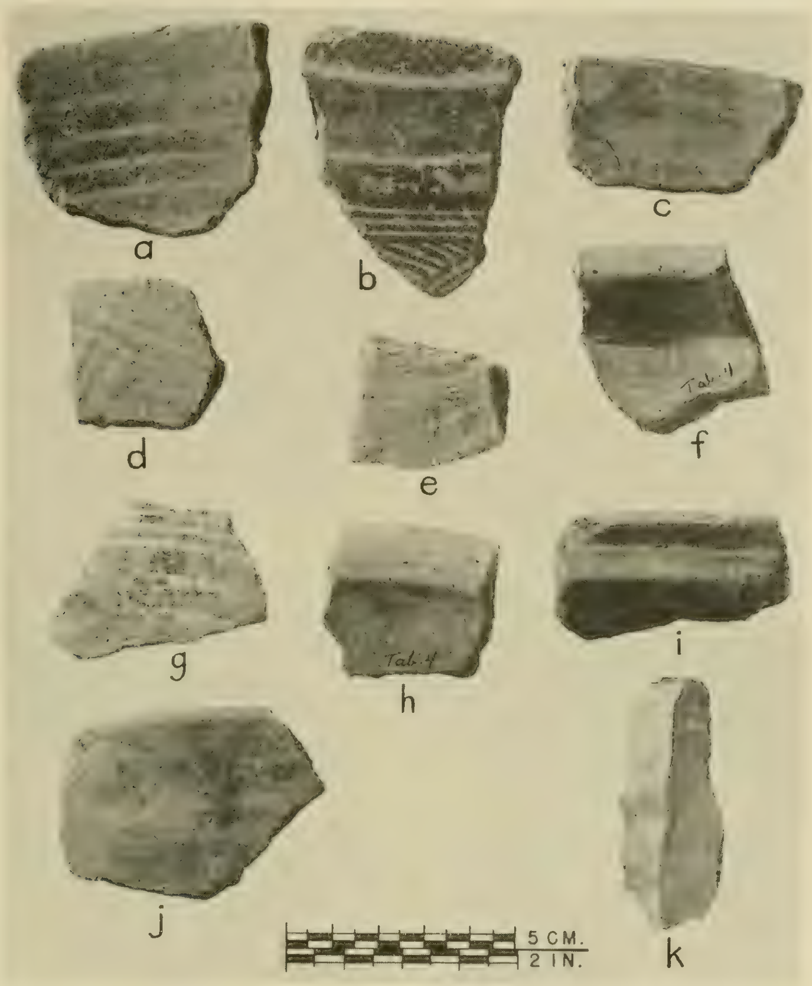
Taboga and Taboguilla stone and shell.

(For explanation, see p. 340.)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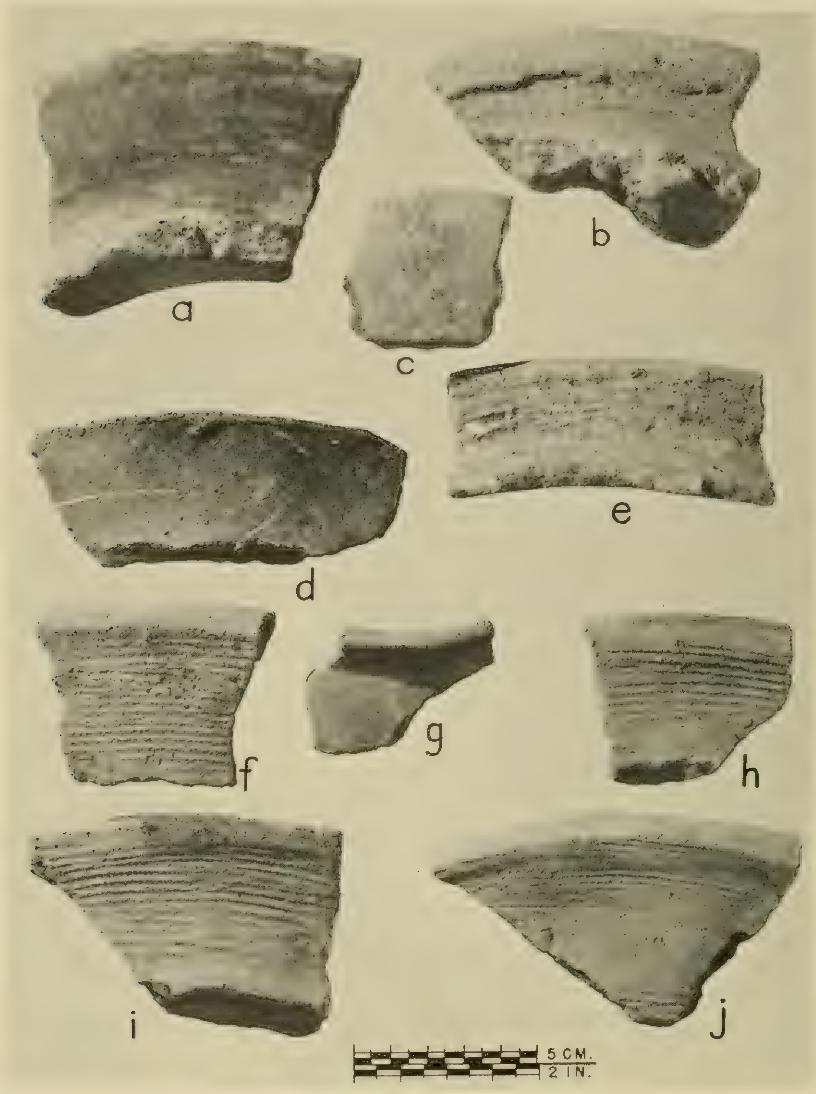
Miscellaneous sherds; Taboga-4.

(For explanation, see p. 340.)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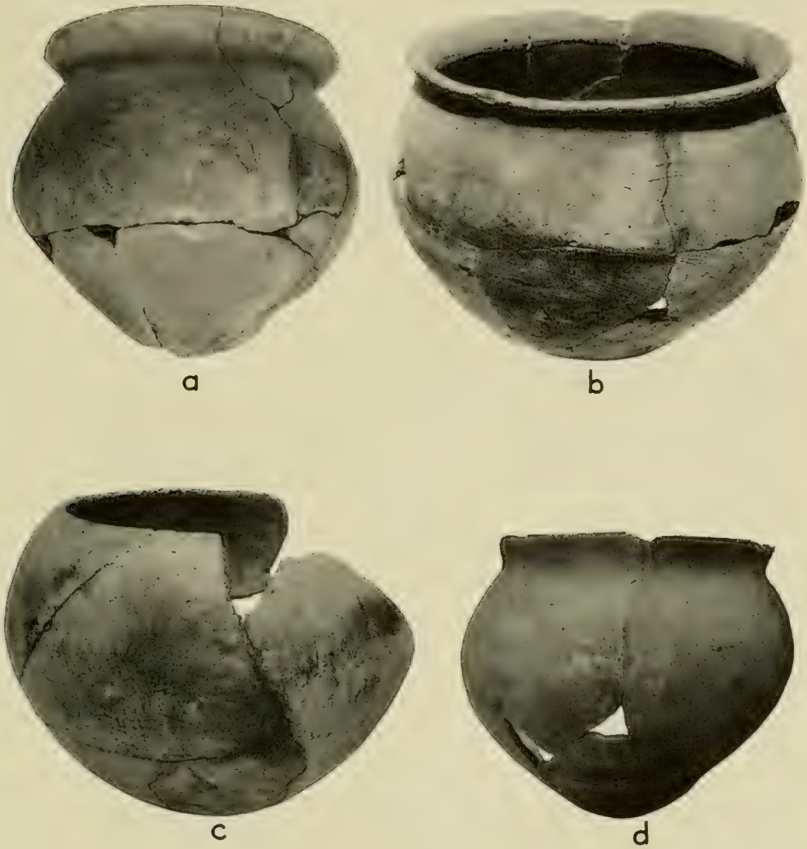
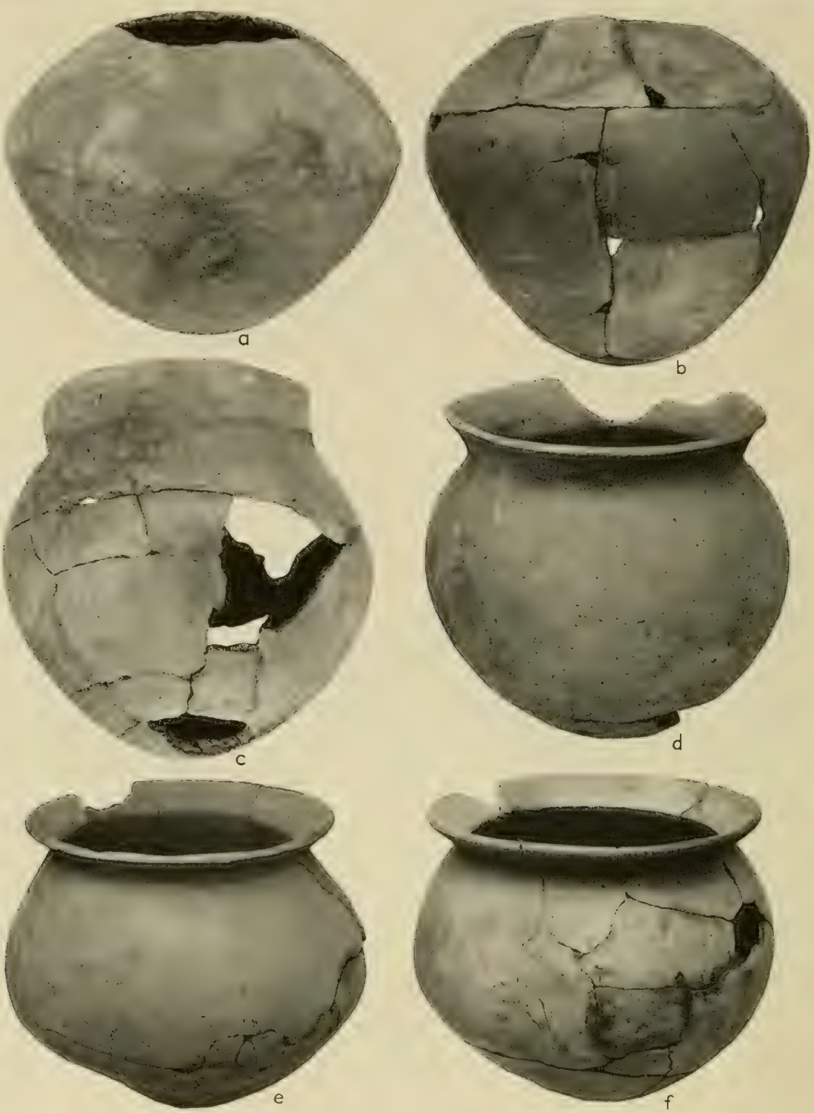
Rim sherds; Taboga–4.

(For explanation, see p. 341.)



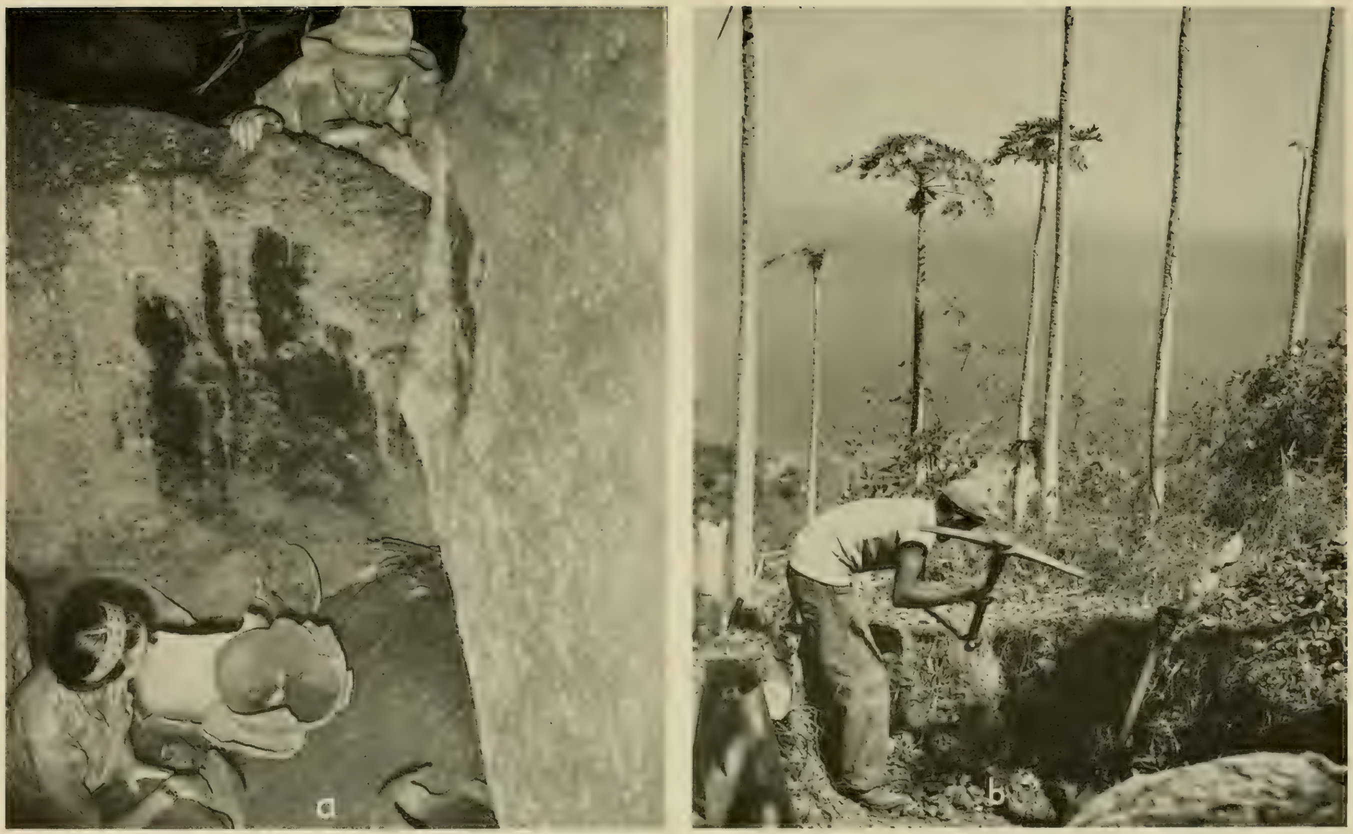
Urabá urns.

(For explanation, see p. 341.)



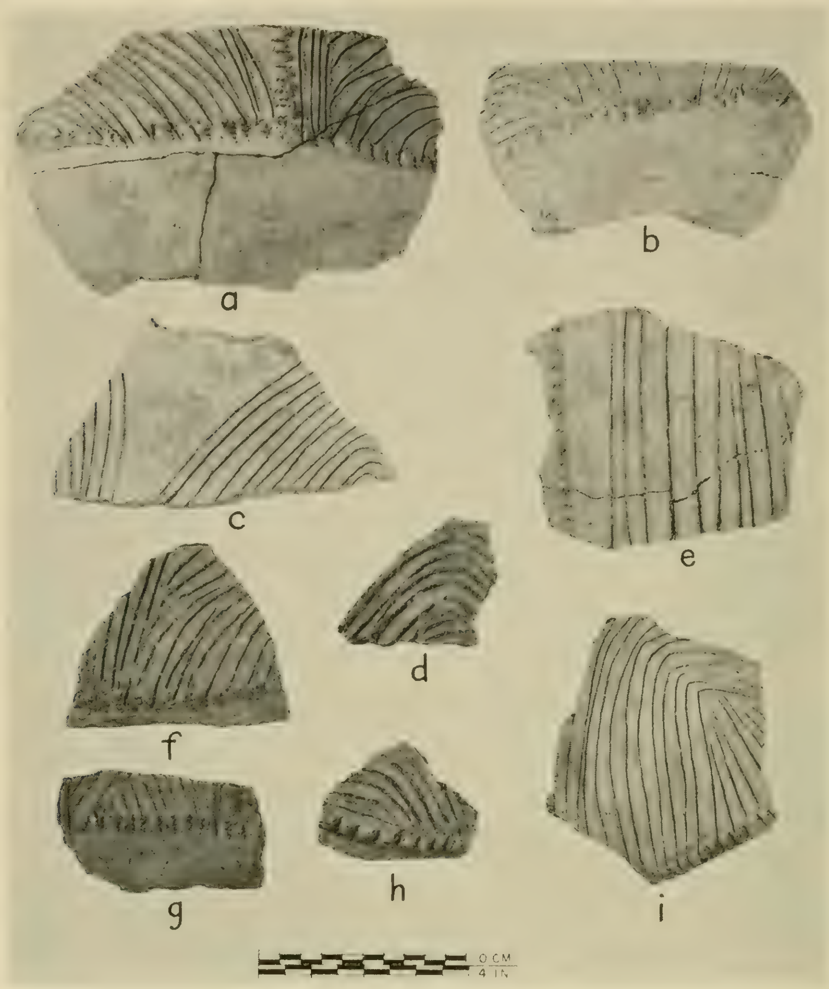
Urabá urns.

(For explanation, see p. 341.)



Sites on Urabá and Taboguilla Islands.

(For explanation, see p. 341.)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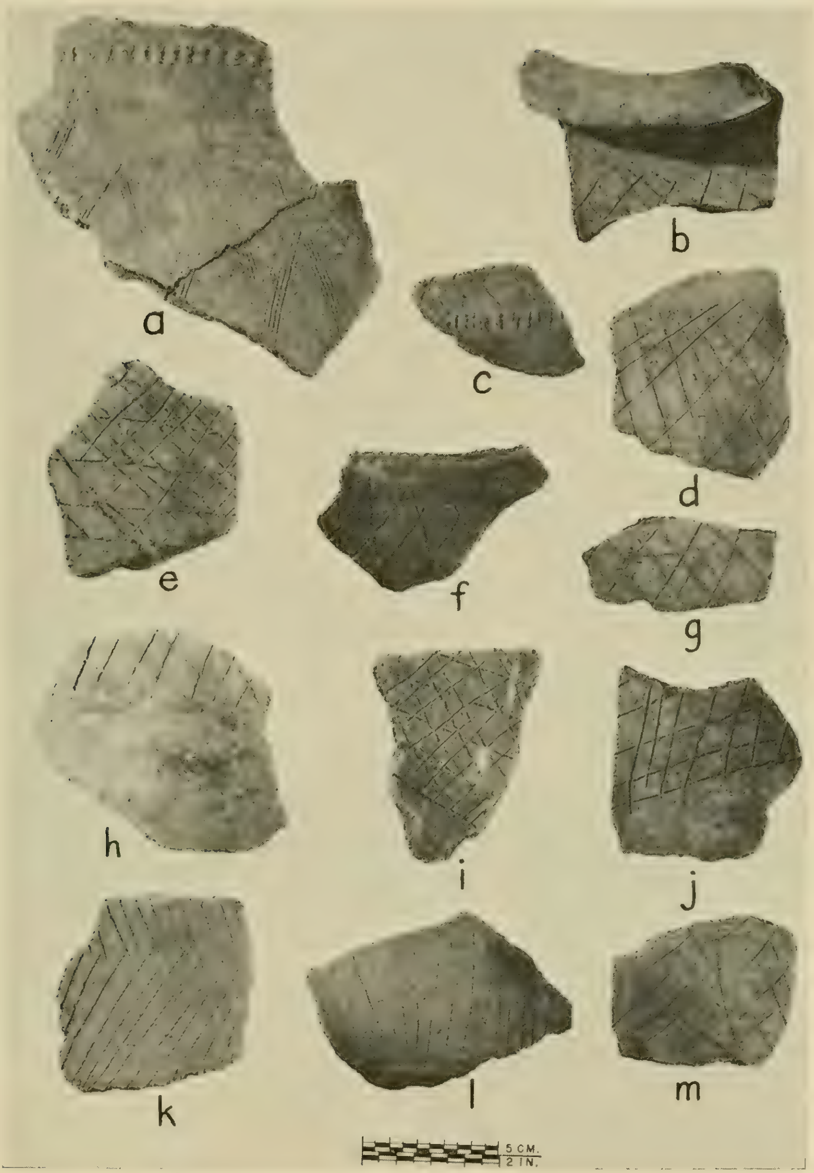
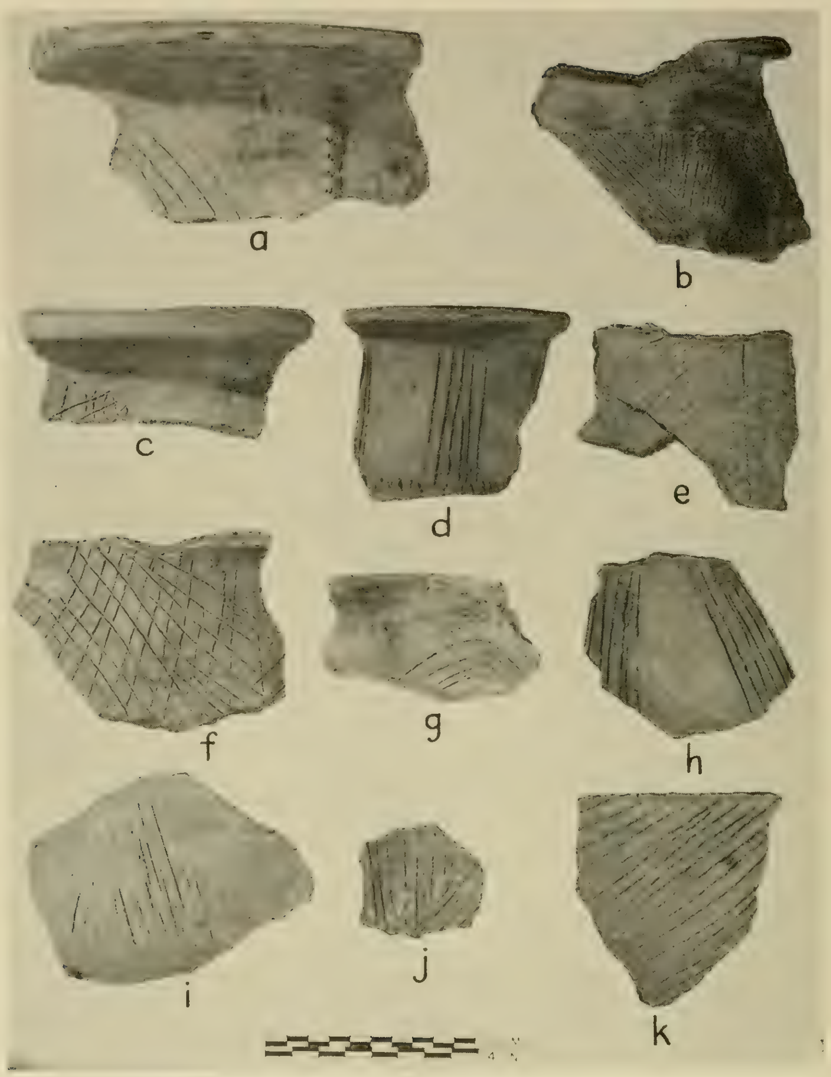
Bold incising; Taboguilla–1.

(For explanation, see p. 341.)


a
b
c
d
e
f
g
h
i
j
k
l
m
5 CM.
2 IN.

Combing and incising; Taboguilla-1.

(For explanation, see pp. 341-342.)


a
b
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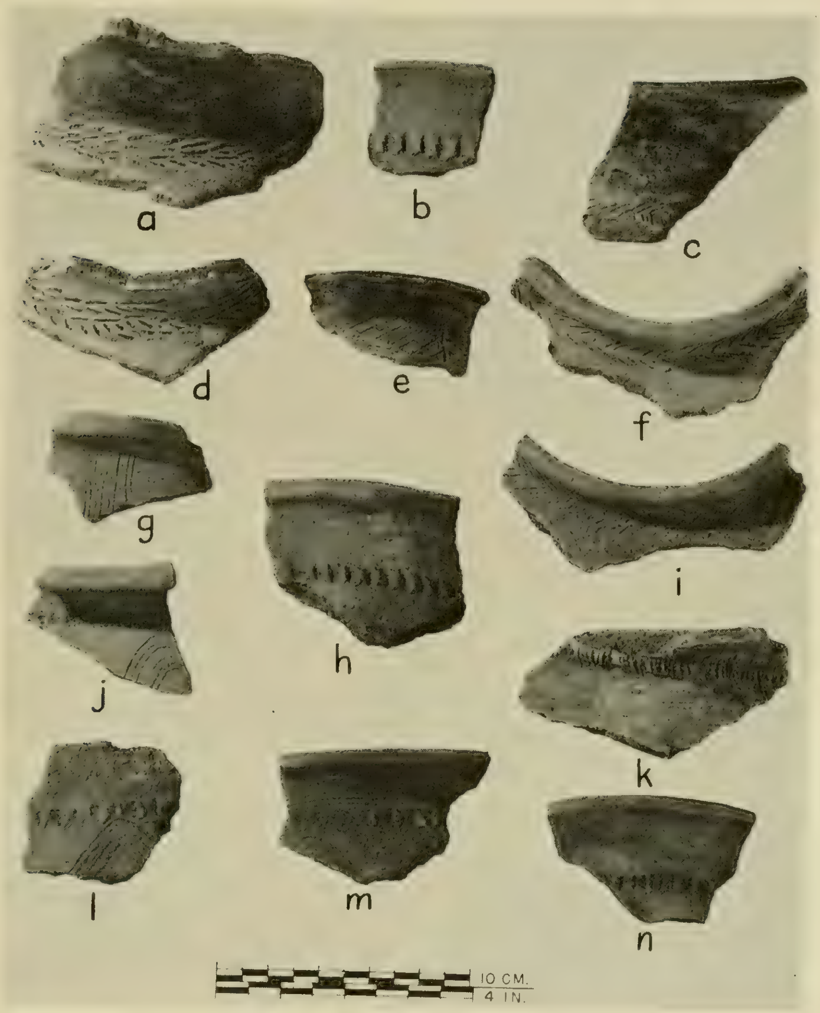
h
i
j
k

Incised ware; Taboguilla-1.

(For explanation, see p. 342.)


a
b
c
d
e
f
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h
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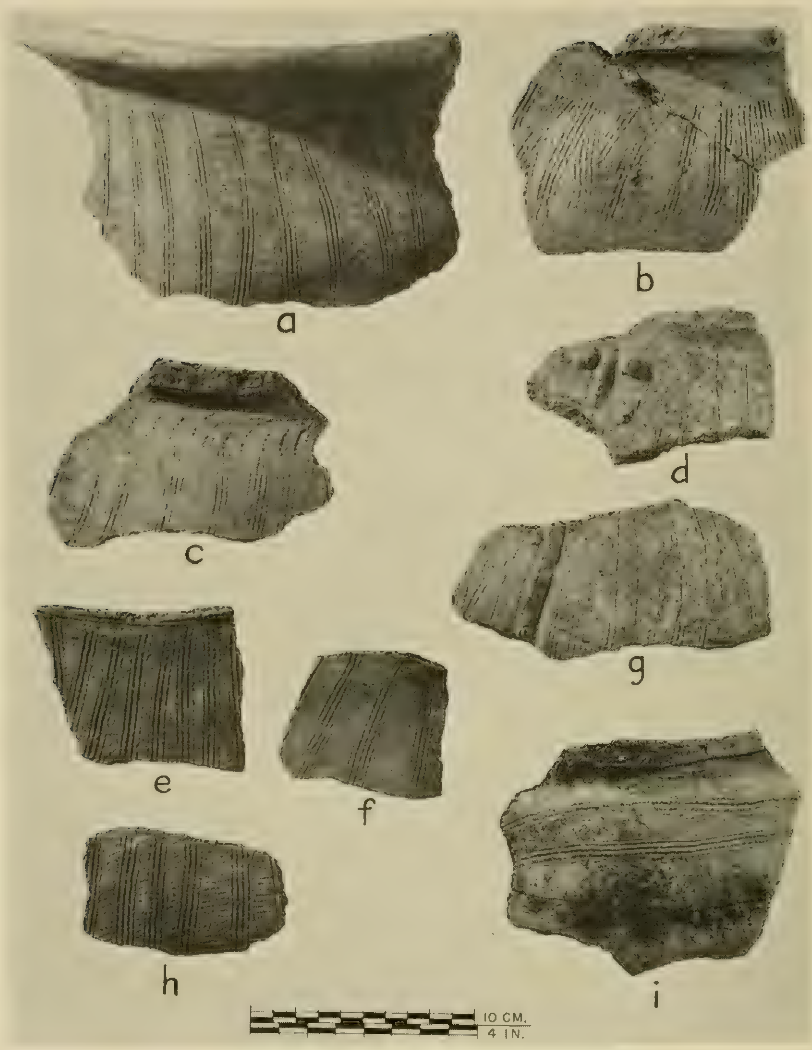
j
k
l
m
n
10 CM.
4 IN.

Various rim decorations; Taboguilla-1.

(For explanation, see p. 342.)


a
b
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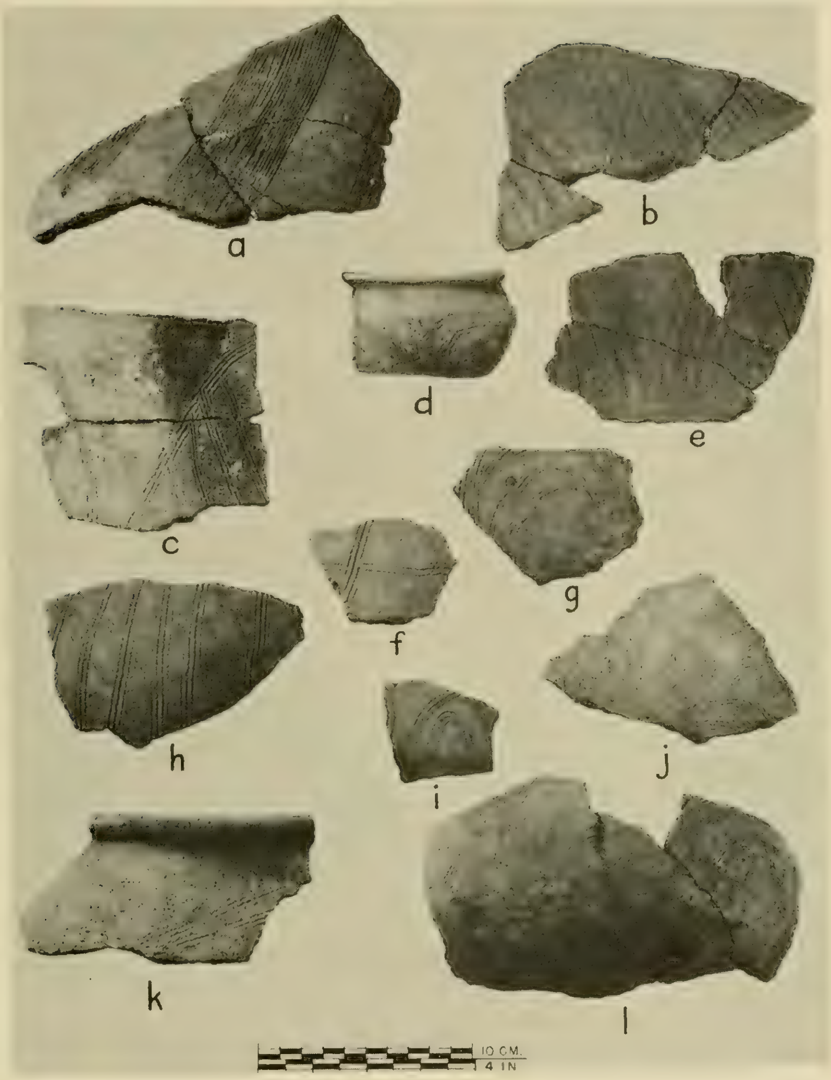
g
e
f
h
i
10 CM.
4 IN.

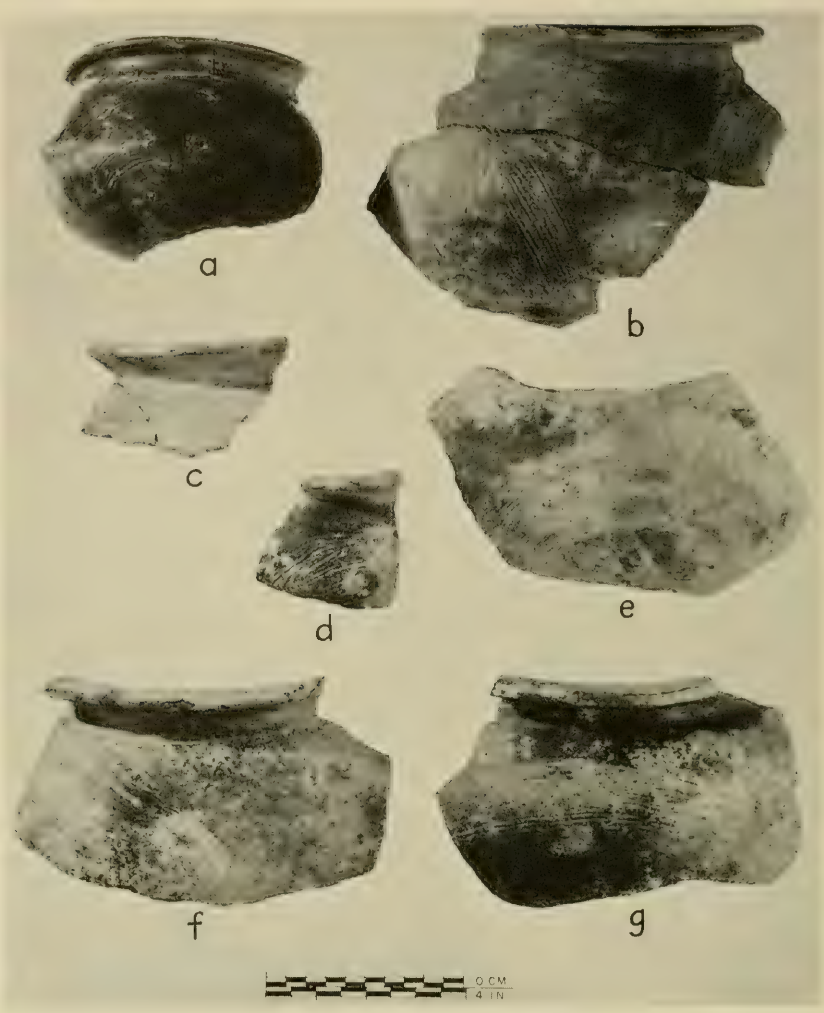
Narrow line combing; Taboguilla–1.

(For explanation see p. 342.)


a
b
c
d
e
f
g
h
i
j
k
l
10 CM.
4 IN

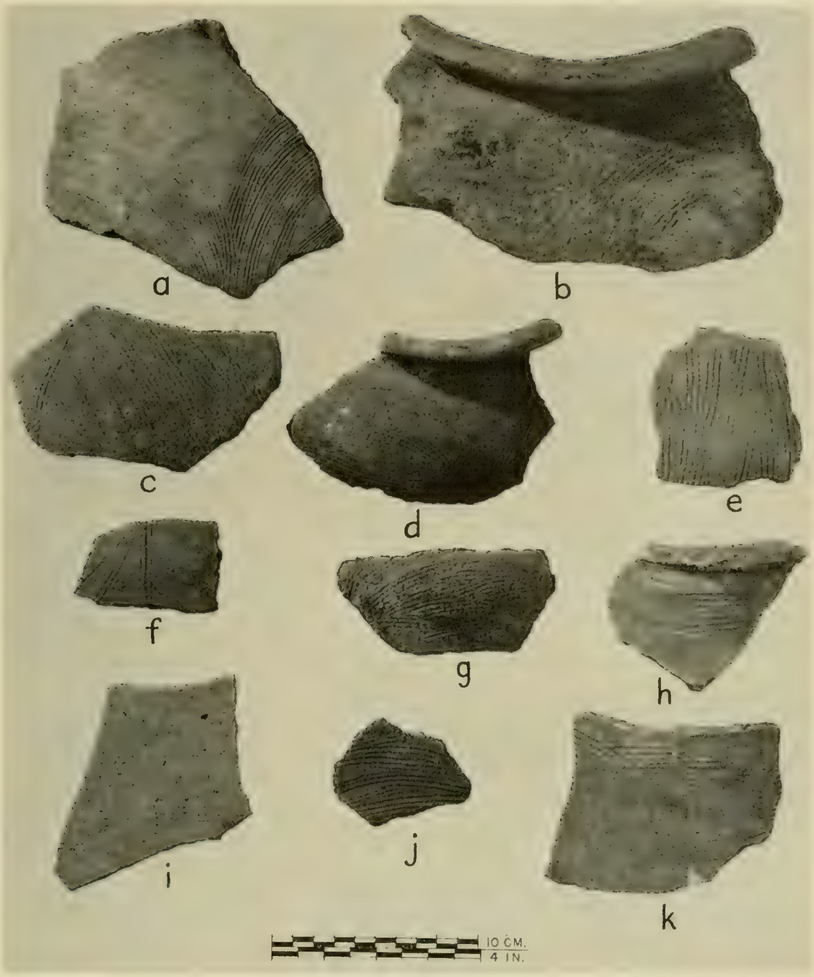
Combed ware; Taboguilla–1.

(For explanation, see p. 342.)



Fragments of globular bowls decorated with combed designs; Taboguilla–1.

(For explanation, see pp. 342–343.)


a
b
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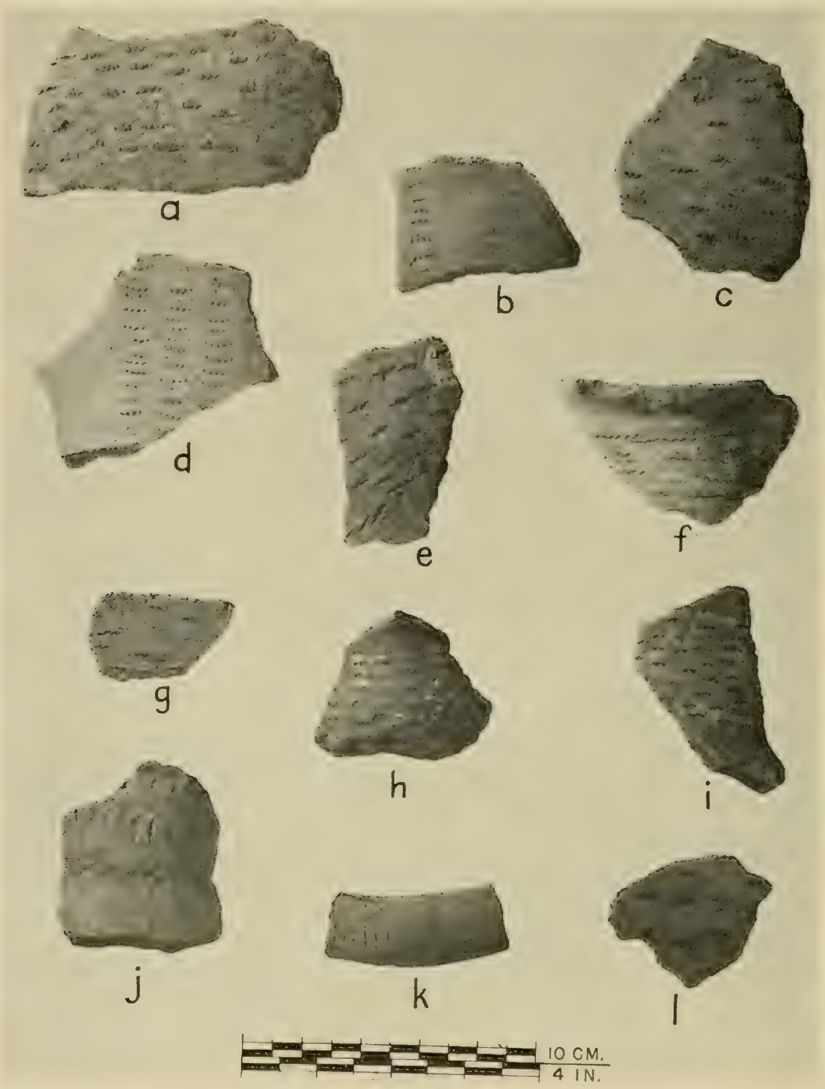
i
j
k
10 CM.
4 IN.

Multiple line combing; Taboguilla–1.

(For explanation, see p. 343.)


a
b
c
d
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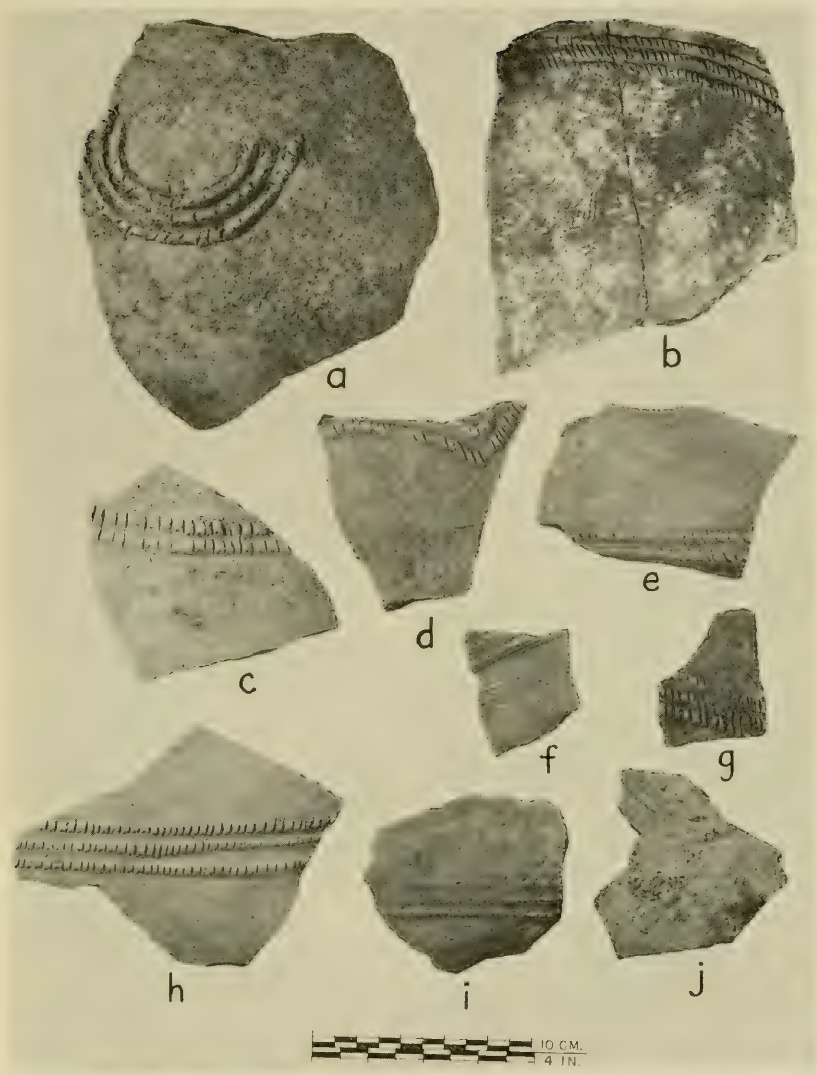
i
j
k
l
10 CM.
4 IN.

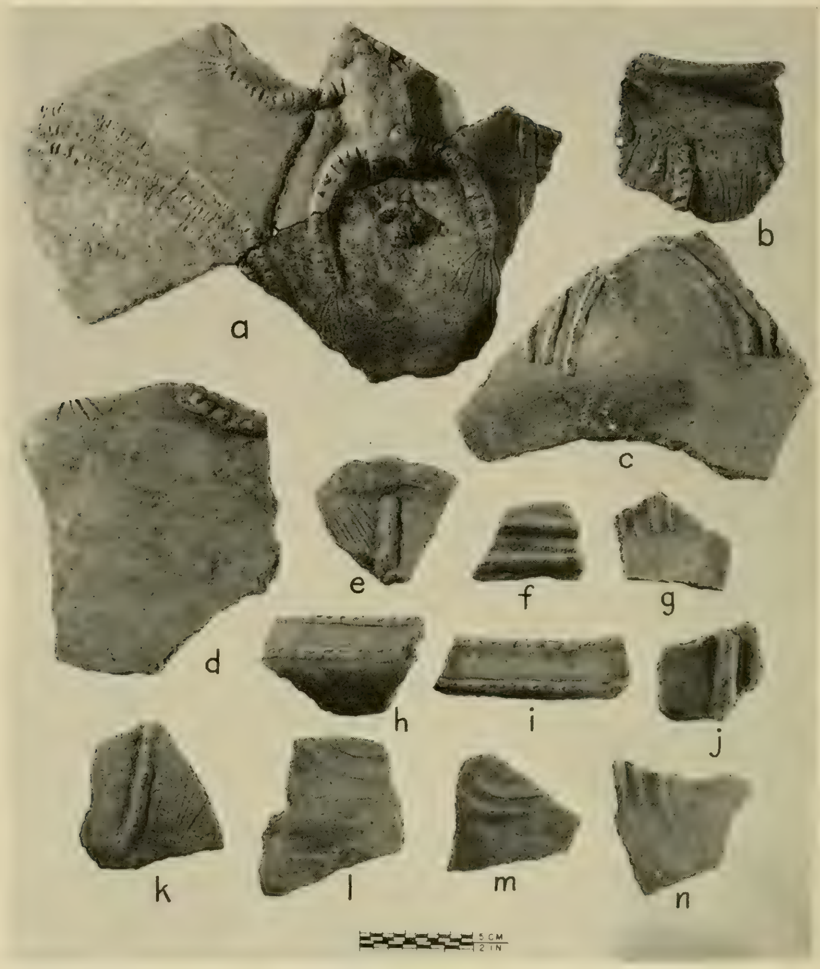
Scallop impressions; Taboguilla–1.

(For explanation, see p. 343.)


a
b
c
d
e
f
g
h
i
j
10 CM.
4 IN.

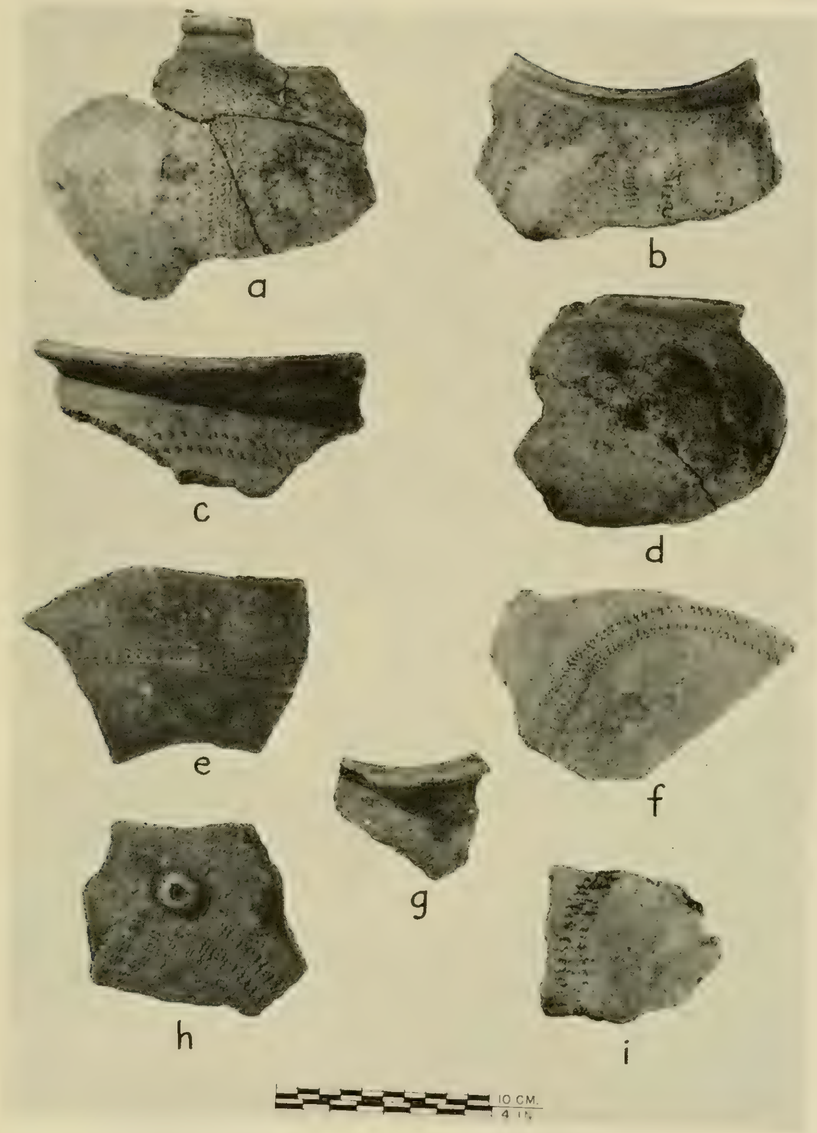
Filleting on combed surface; Taboguilla–1.

(For explanation, see p. 343.)


a
b
c
d
e
f
g
h
i
j
k
l
m
n
5 CM
2 IN

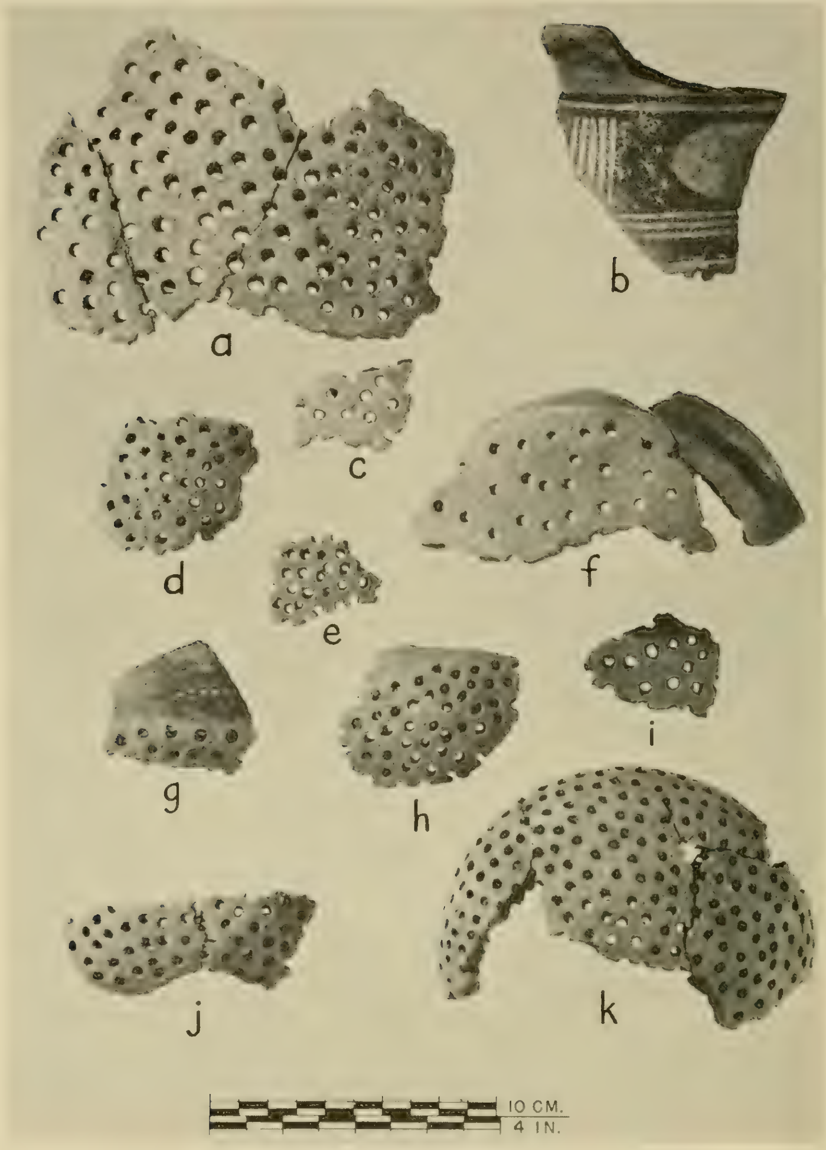
Filleted ware; Taboguilla-1.

(For explanation, see p. 343.)


a
b
c
d
e
f
g
h
i
10 CM.
4 IN.

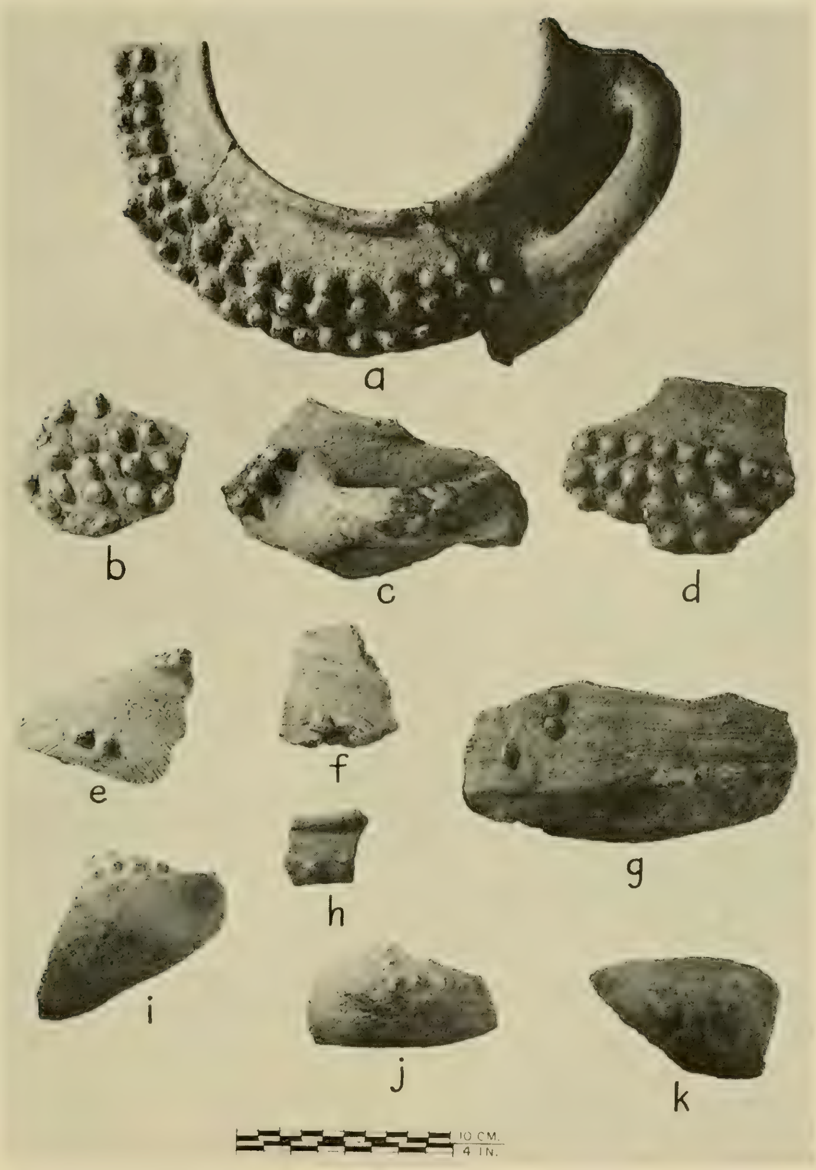
Subglobular bowls with scallop indented filleting; Taboguilla–1.

(For explanation, see p. 343.)


a
b
c
d
e
f
g
h
i
j
k
10 CM.
4 IN.

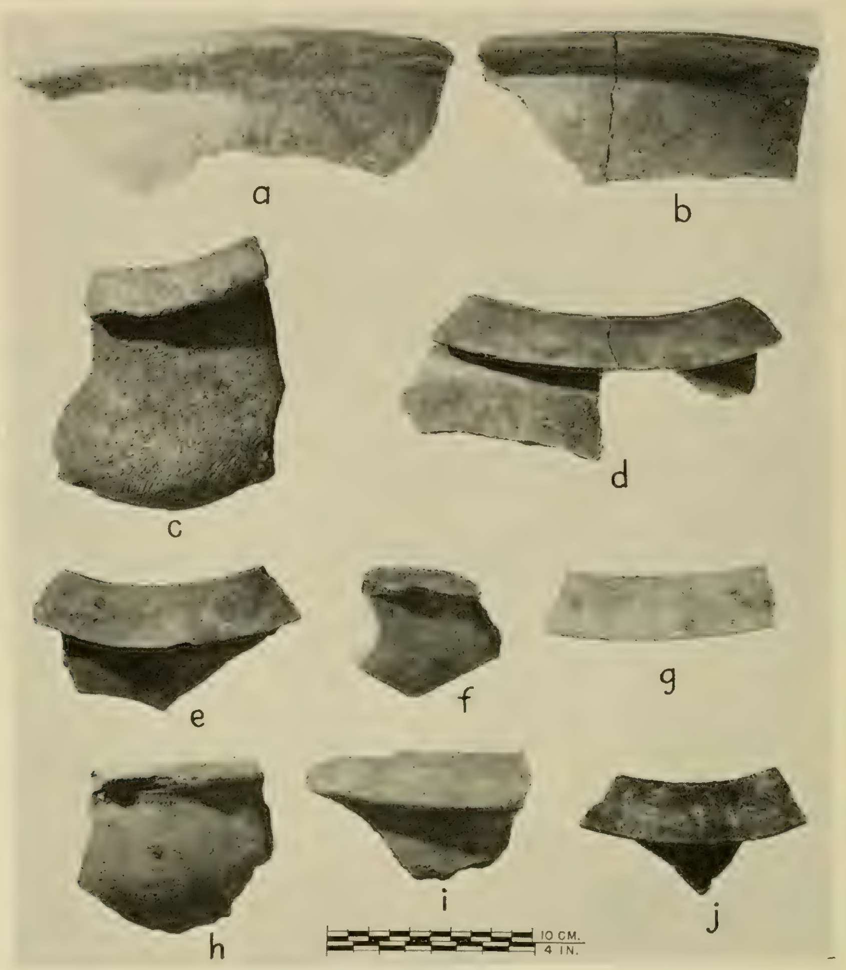
Collanders; Taboguilla-1.

(For explanation, see p. 344.)


a
b
c
d
e
f
g
h
i
j
k
10 CM.
4 IN.

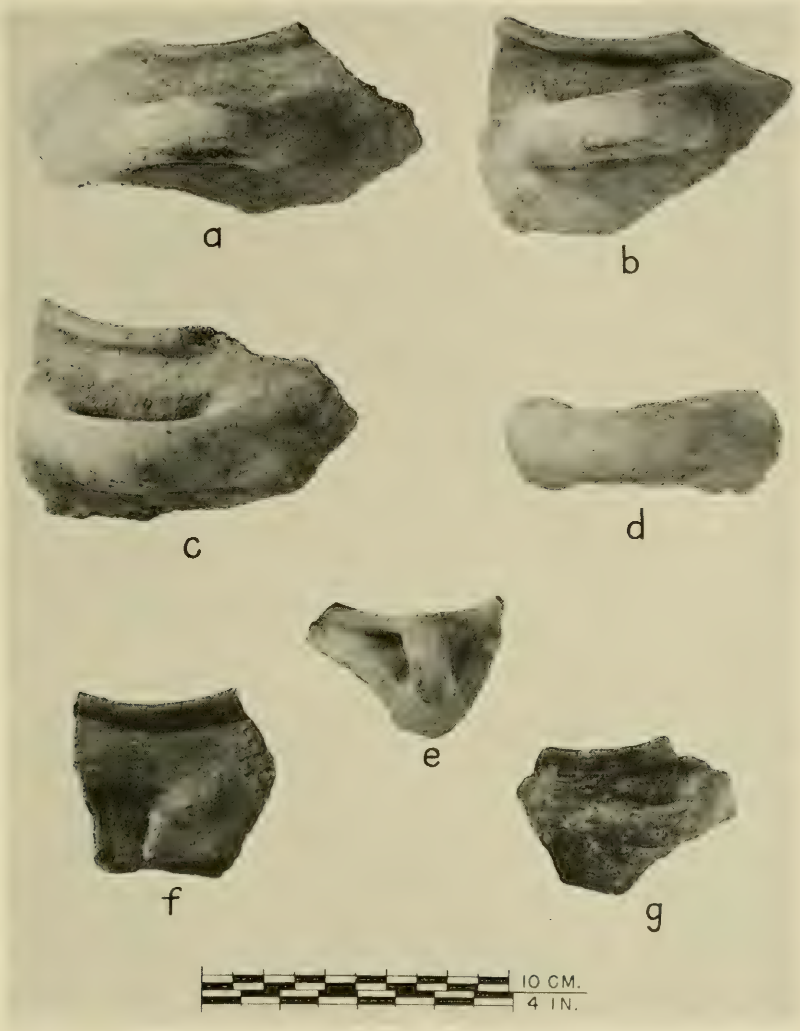
Sherds with bossed decorations; Taboguilla–1.

(For explanation, see p. 344.)


a
b
c
d
e
f
g
h
i
j
10 CM.
4 IN.

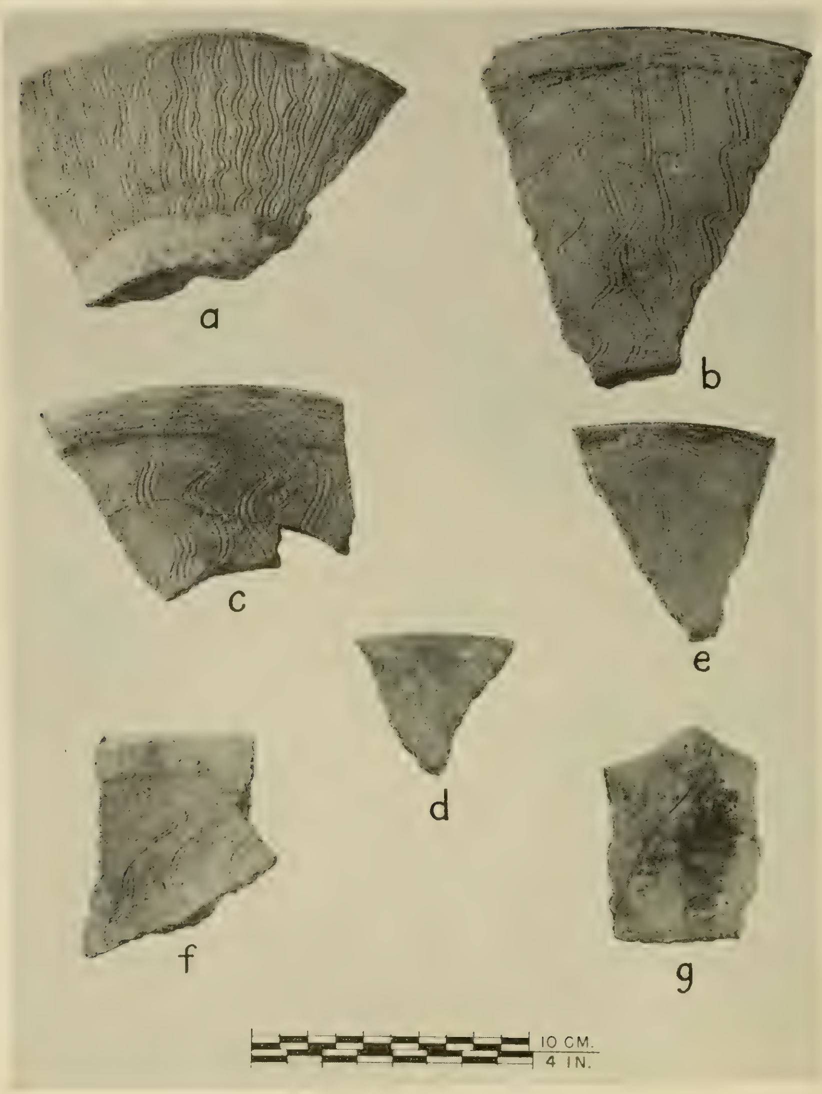
Broad flat rims of subglobular bowls; Taboguilla–1.

(For explanation, see p. 344.)


a
b
c
d
e
f
g
10 CM.
4 IN.

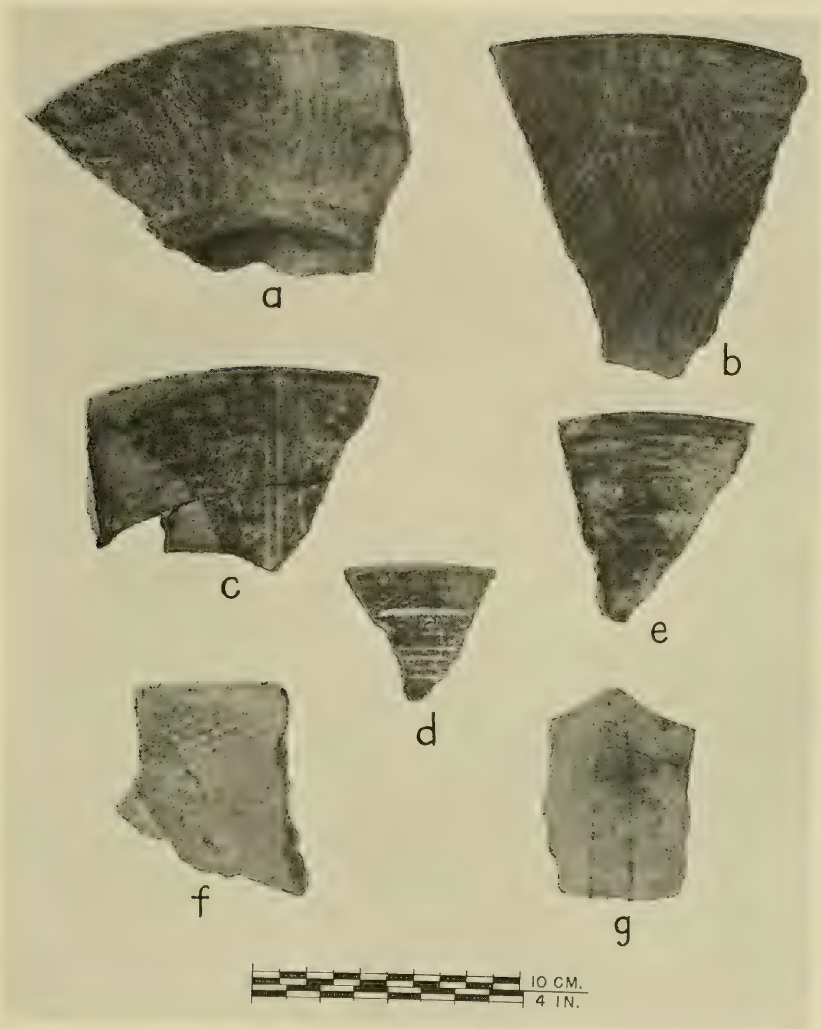
Subglobular bowls with strap handles; Taboguilla–1.

(For explanation, see p. 344.)


a
b
c
e
d
f
g
10 CM.
4 IN.

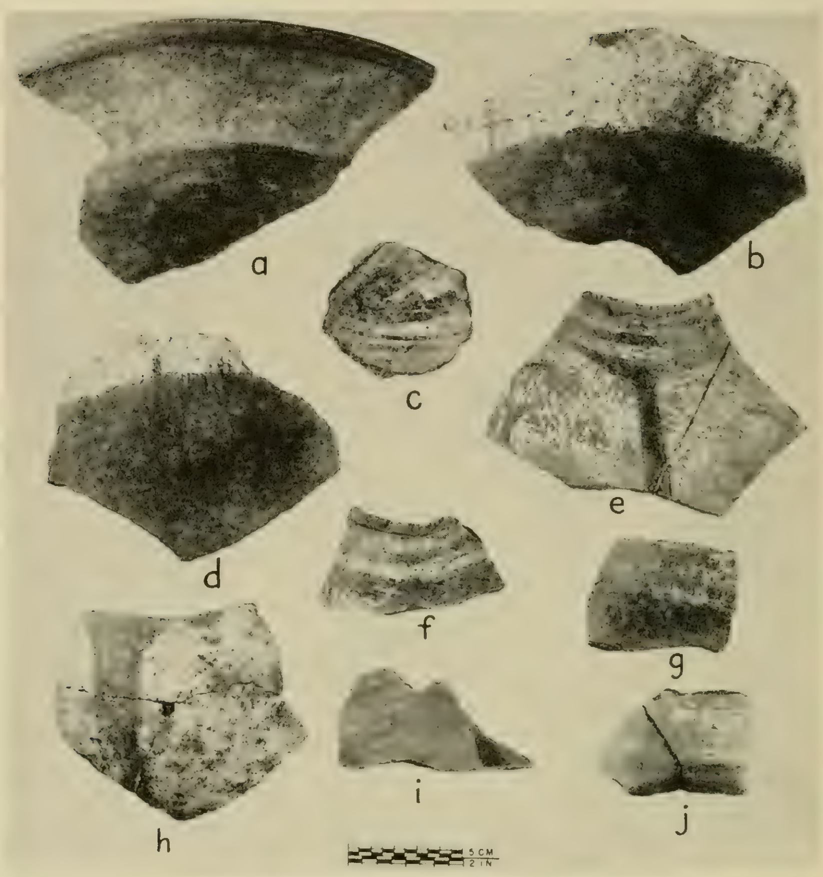
Rim sherds of flat shallow plates; Taboguilla–1.

(For explanation, see p. 344.)


a
b
c
d
e
f
g
10 CM.
4 IN.

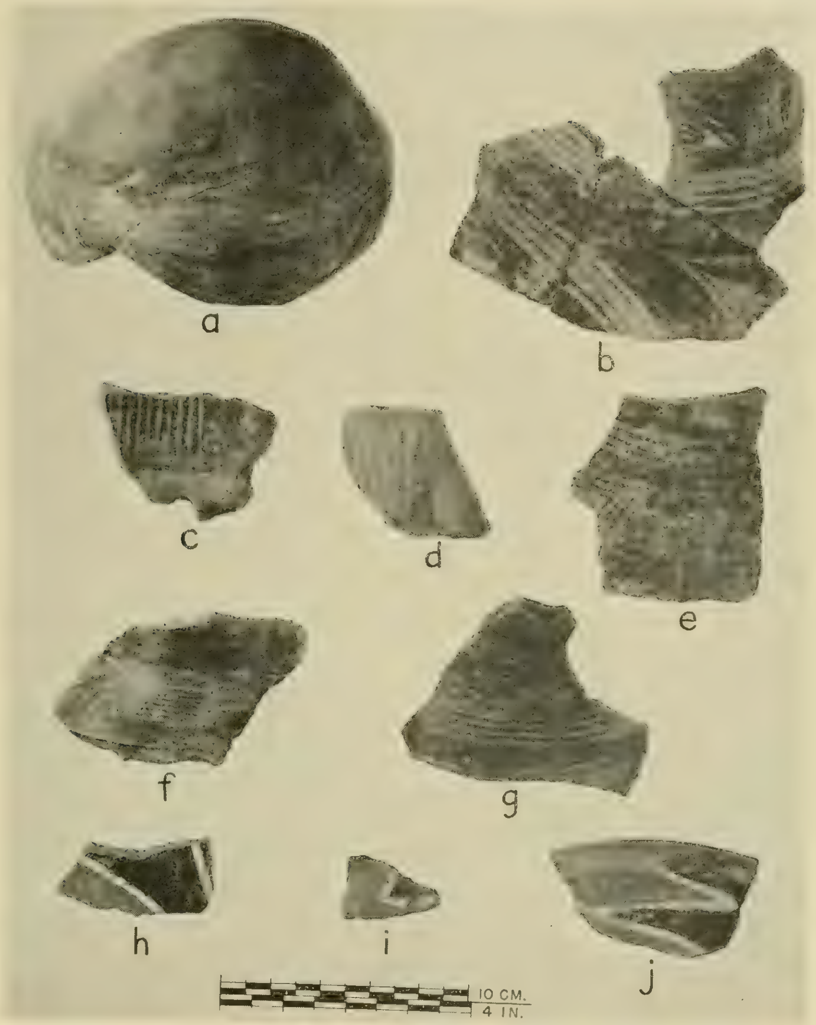
Interior of rim sherds shown in plate 74.

(For explanation, see p. 345.)


a
b
c
d
e
f
g
h
i
j
5 CM
2 IN

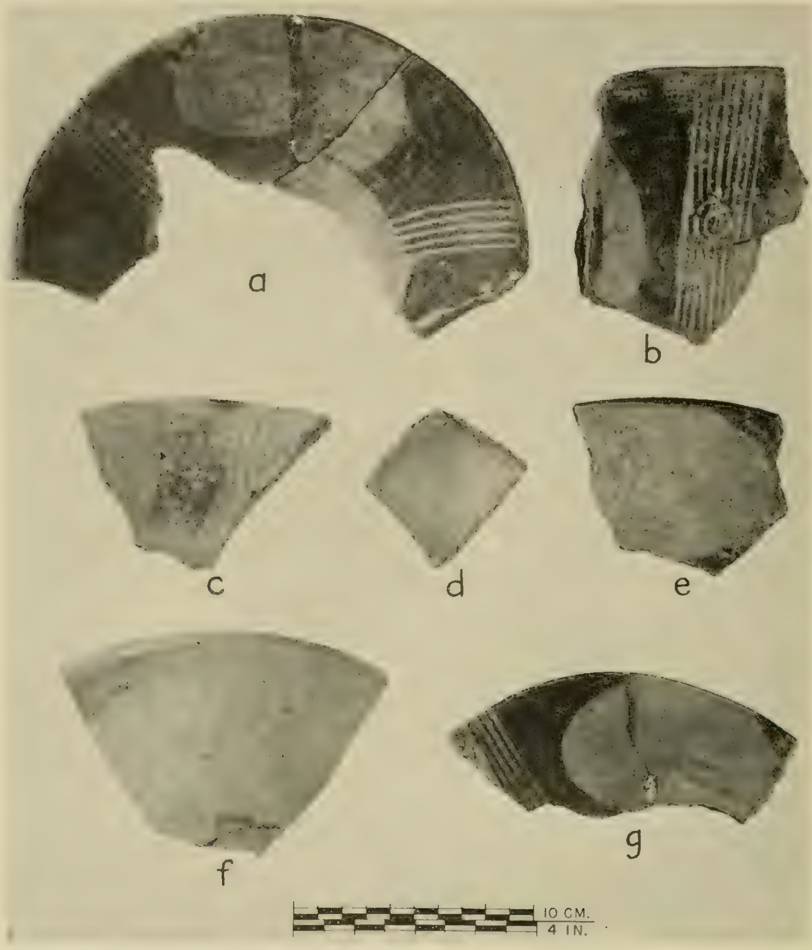
Miscellaneous painted sherds; Taboguilla–1.

(For explanation, see p. 345.)


a
b
c
d
e
f
g
h
i
j
10 CM.
4 IN.

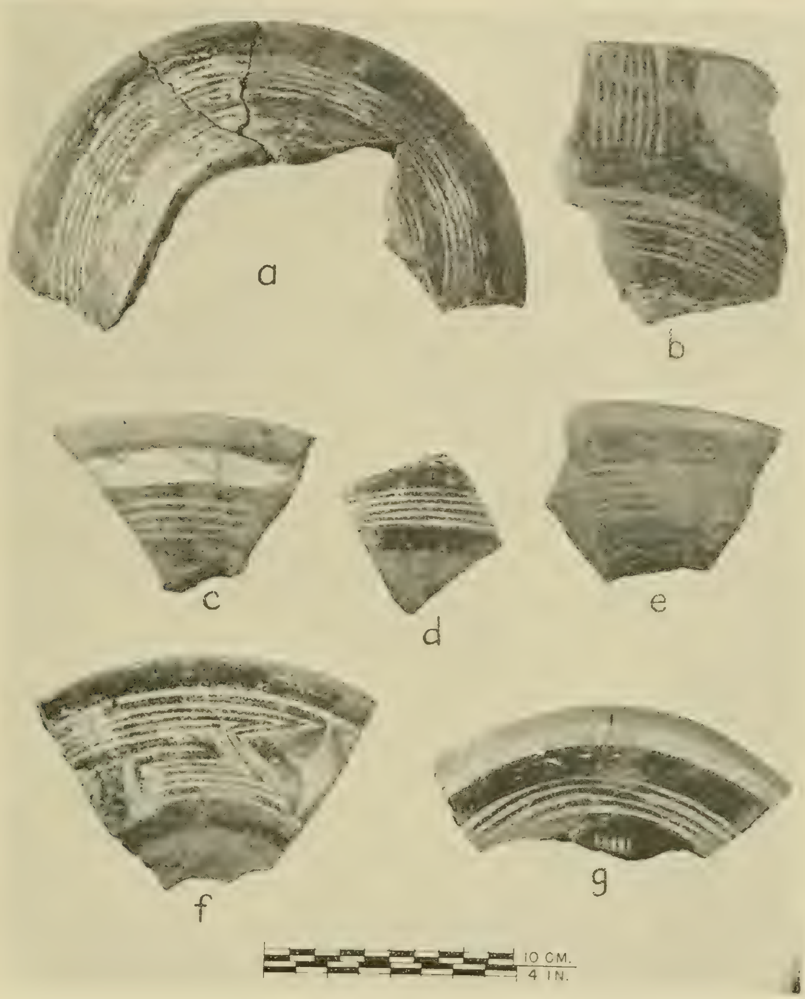
Black-on-orange-and-black outlined with white-on-orange; Taboguilla-1.

(For explanation, see p. 315.)


a
b
c
d
e
f
g
10 CM.
4 IN.

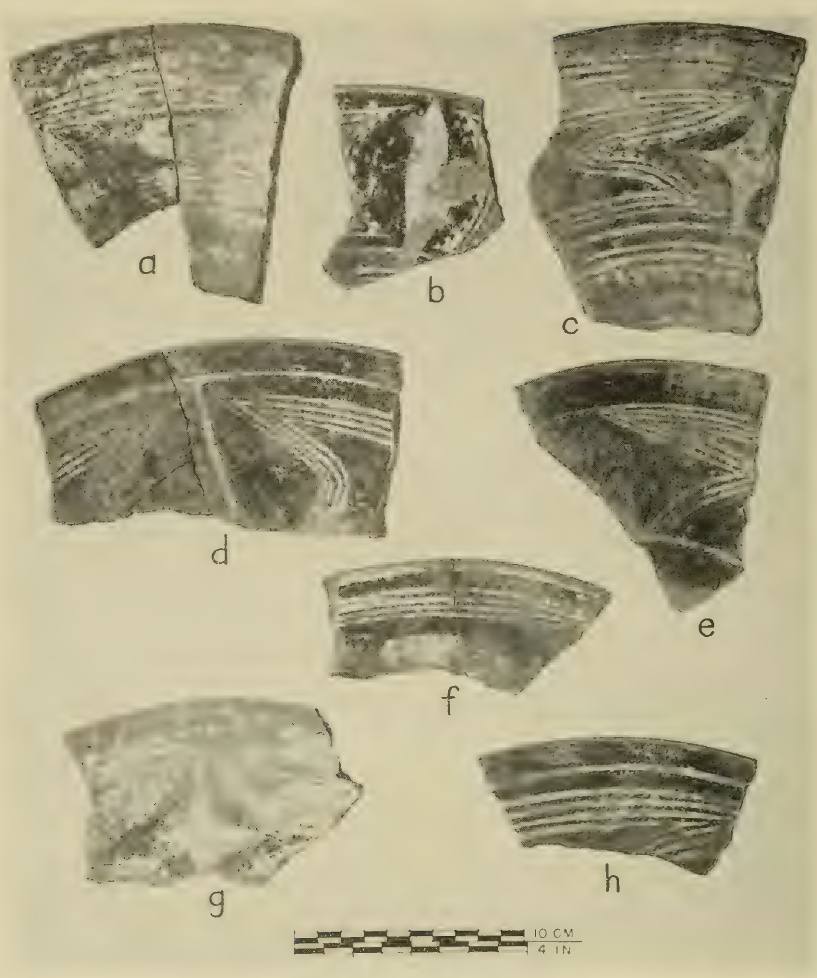
Black-and-white-on-orange pedestal base bowl sherds; Taboguilla–1.

(For explanation, see p. 345.)


a
b
c
d
e
f
g
10 CM.
4 IN.

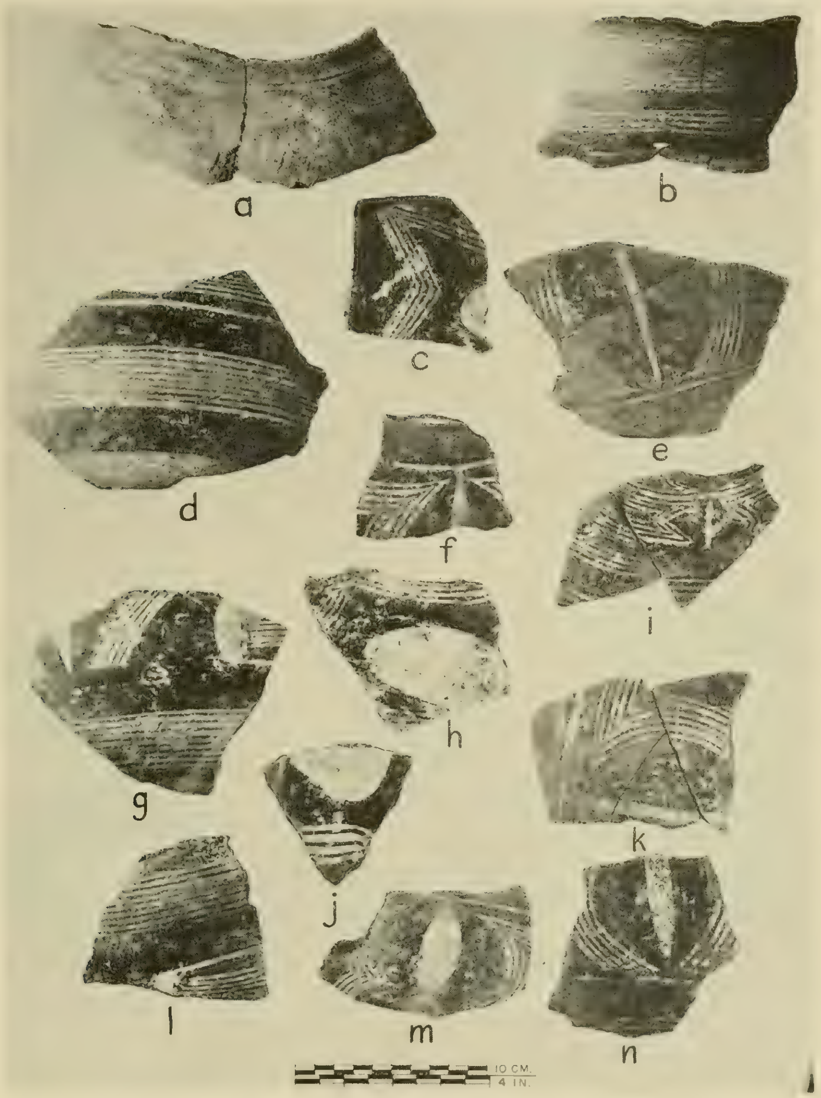
Reverse of plate 78.

(For explanation, see p. 345.)


a
b
c
d
e
f
g
h
10 CM
4 IN

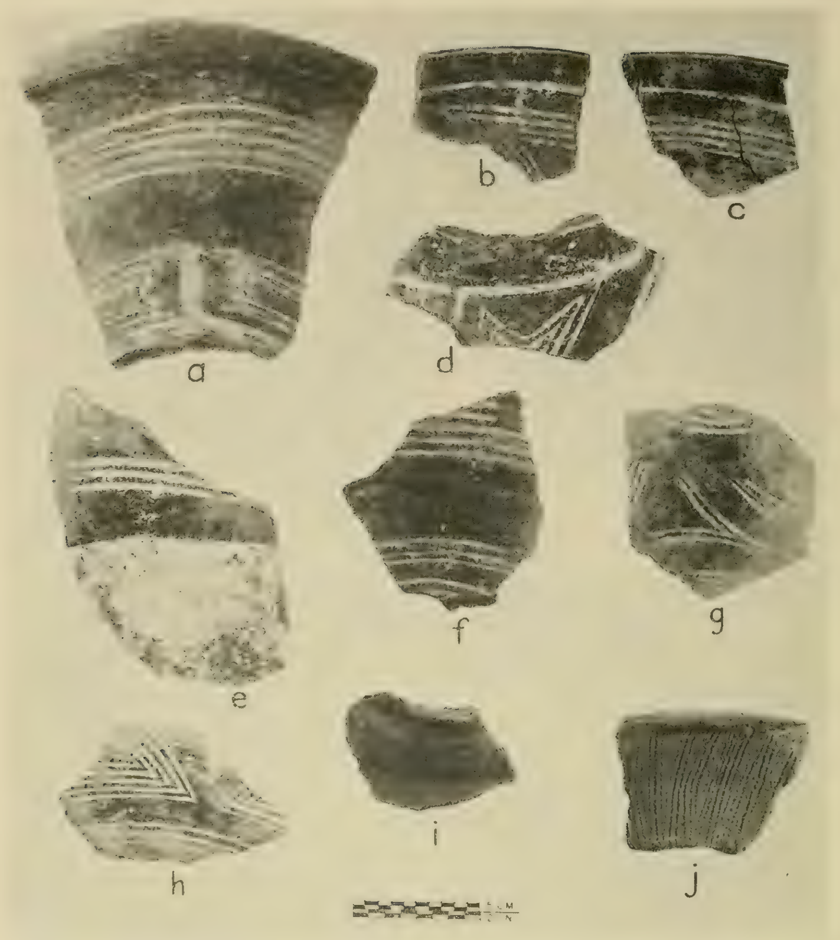
Pedestal base bowl sherds.

(For explanation, see p. 345.)


a
b
c
d
e
f
i
g
h
k
j
l
m
n
10 CM.
4 IN.

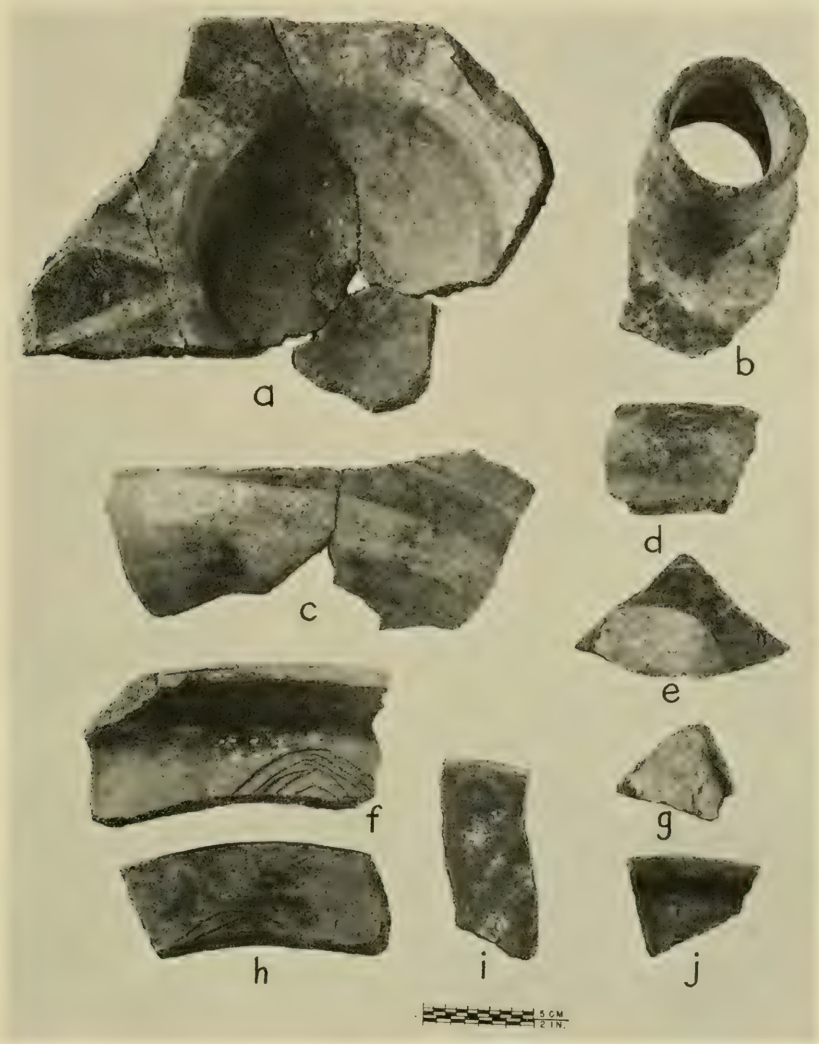
Sherds from black-and-white-on-orange pedestal base bowls; Taboguilla–1.

(For explanation, see p. 345.)



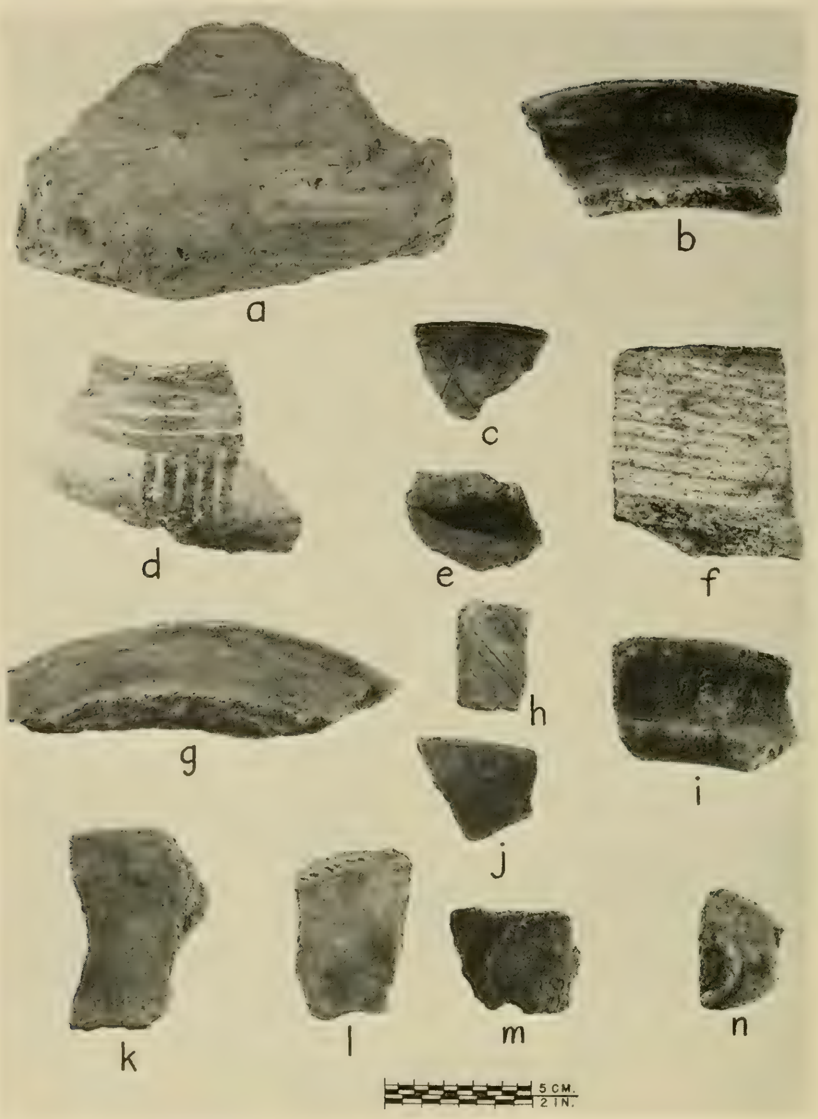
Miscellaneous black-on-white-and-orange sherds; Taboguilla–1.

(For explanation, see p. 316.)


a
b
d
c
e
f
g
i
h
j
5 CM
2 IN.

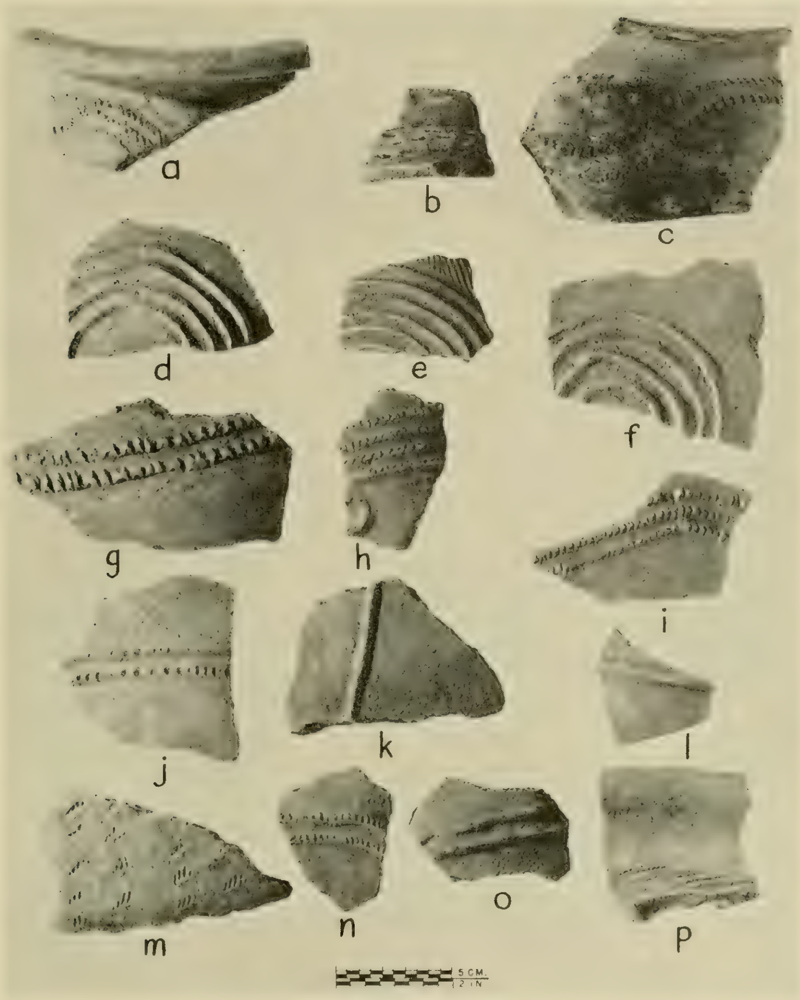
Miscellaneous painted sherds; Taboguilla-1.

(For explanation, see p. 346.)


a
b
c
d
e
f
g
h
i
j
k
l
m
n
5 CM.
2 IN.

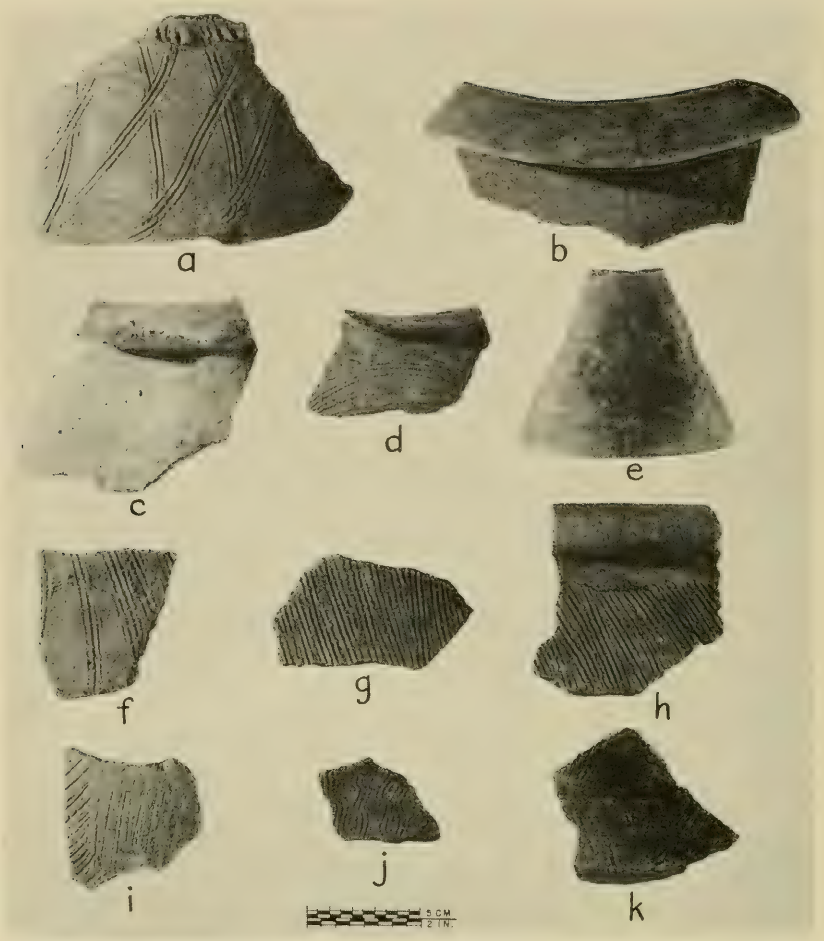
Miscellaneous sherds; Taboguilla-3 rock shelter.

(For explanation, see p. 346.)


a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
5 CM.
2 IN.

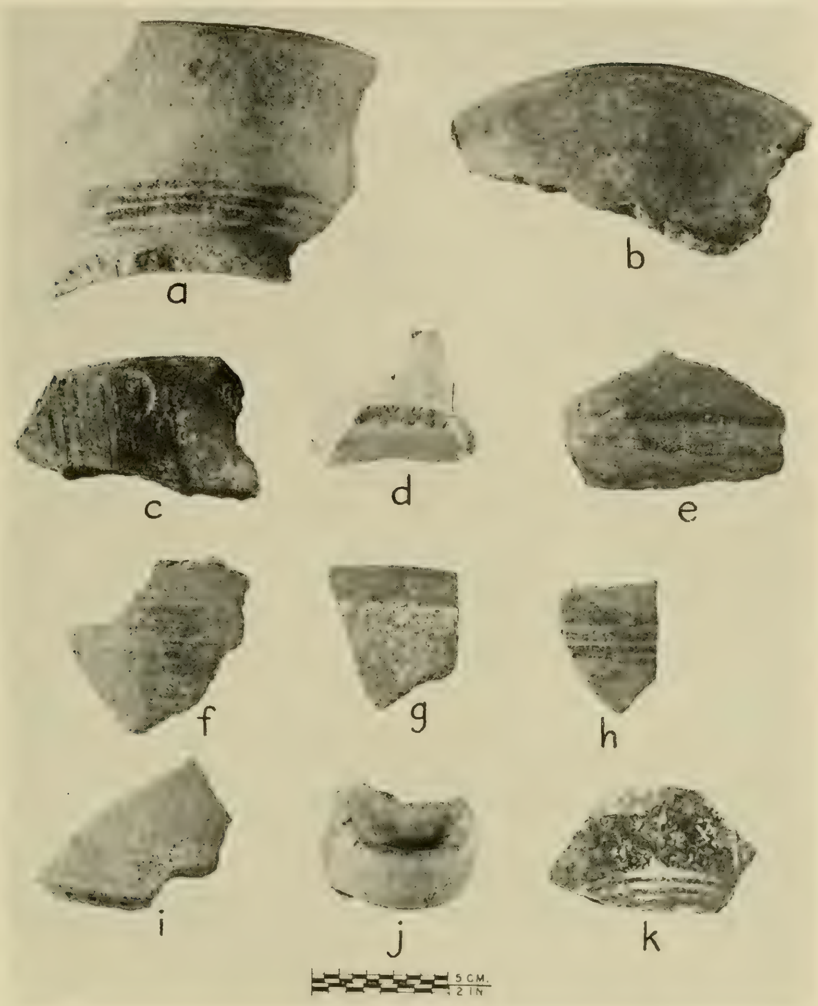
Filleted and scallop impressed ware; Taboguilla–2.

(For explanation, see pp. 346–347.)


a
b
c
d
e
f
g
h
i
j
k
5 CM
2 IN.

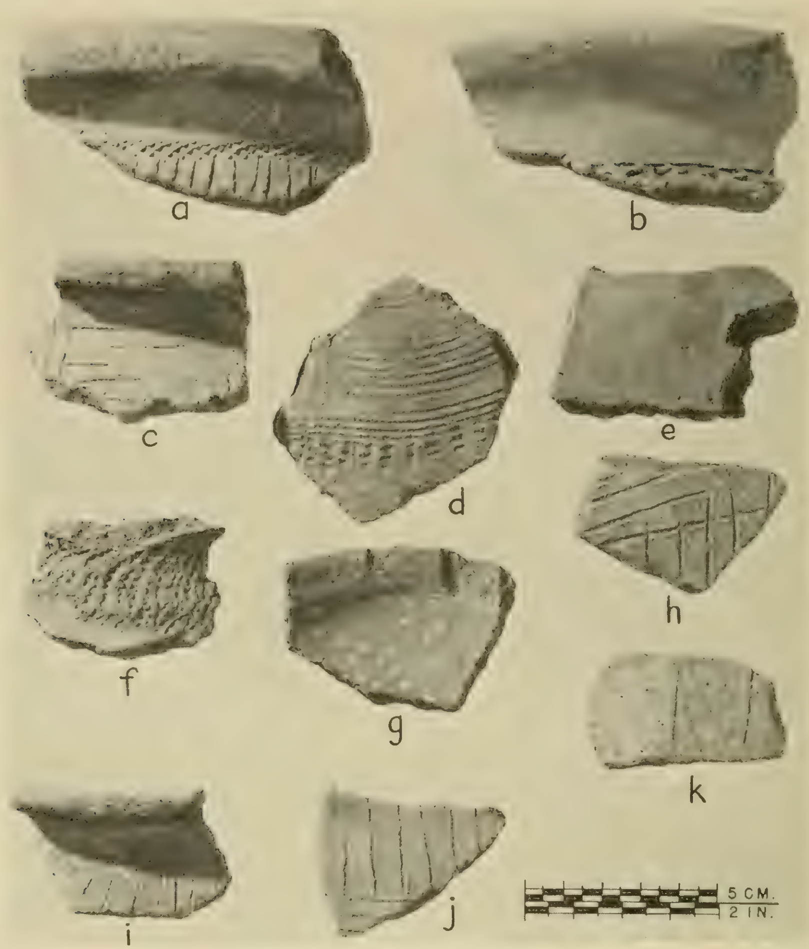
Miscellaneous sherds; Taboguilla–2.

(For explanation, see p. 347.)


a
b
c
d
e
f
g
h
i
j
k
5 CM.
2 IN.

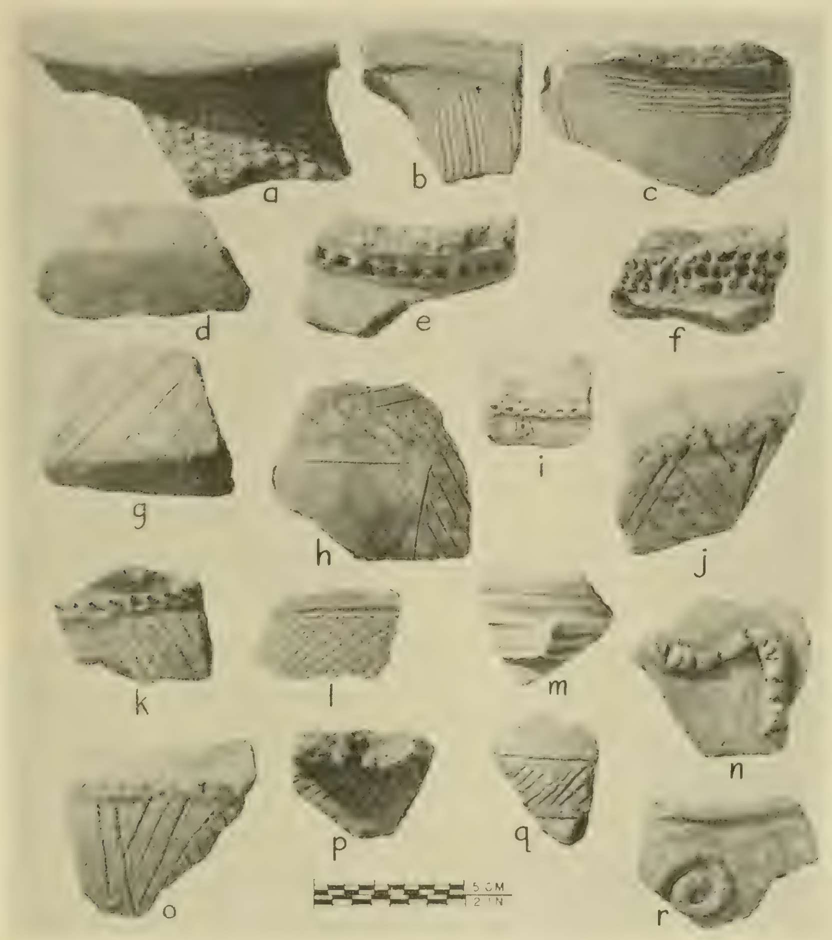
Miscellaneous sherds; Taboguilla–2.

(For explanation, see p. 347.)


a
b
c
d
e
h
f
g
k
i
j
5 CM.
2 IN.

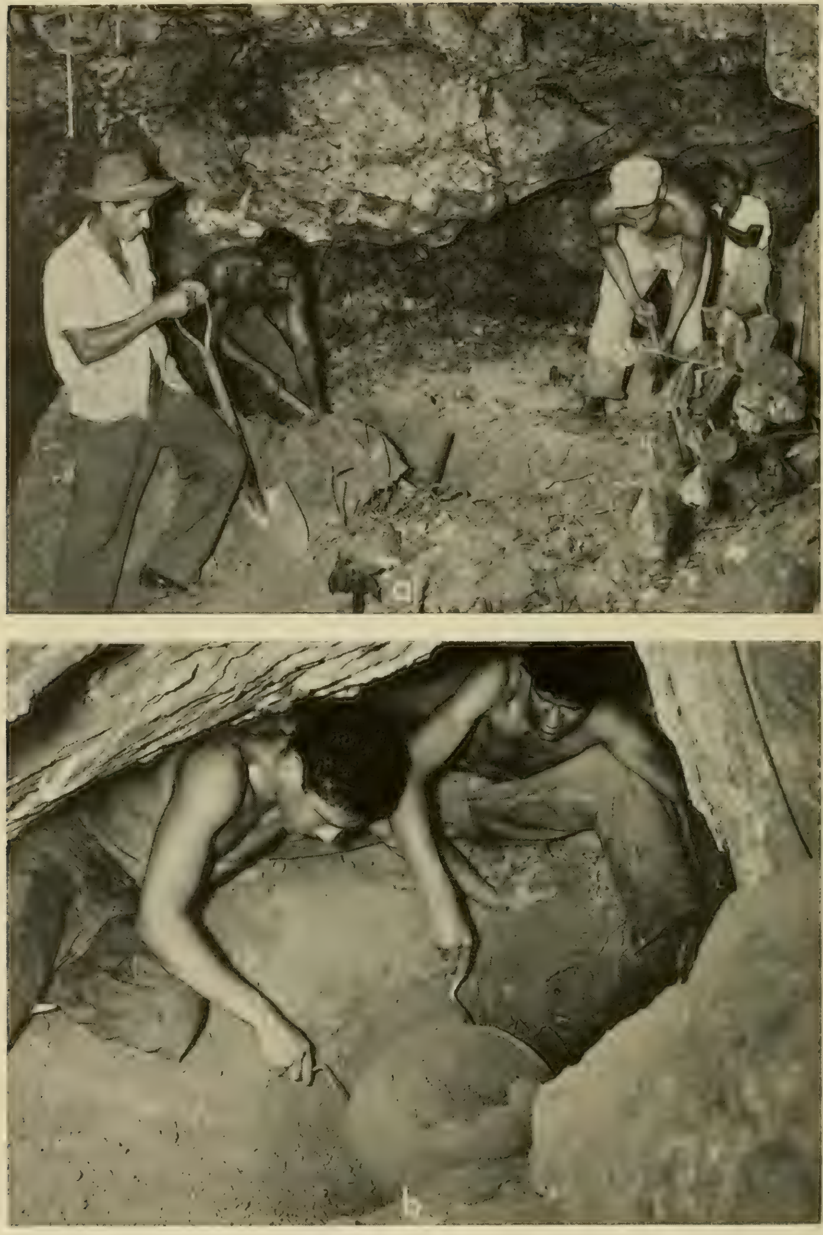
Miscellaneous sherds; Taboguilla–1.

(For explanation, see p. 347.)


a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
5 CM
2 IN

Miscellaneous sherds; Taboguilla–1.

For explanation, see pp. 347–348



Taboguilla–3; rock shelter site on Taboguilla.

(For explanation, see p. 348.)

SMITHSONIAN INSTITUTION
Bureau of American Ethnology
Bulletin 191

Anthropological Papers, No. 74

# IROQUOIS MASKS AND MASKMAKING AT ONONDAGA

By JEAN HENDRY

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99. Straight-lipped mask and crooked-mouth mask.
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101. Crooked-mouth masks.
102. Onondaga 1888 DeCost Smith tongue-protruding masks.
103. Straight-lipped wooden mask and Husk Face Society mask.
104. Maskette carved by Allison Thomas.

# IROQUOIS MASKS AND MASKMAKING AT ONONDAGA

By Jean Hendry

## INTRODUCTION

Few features of Iroquois culture have aroused a more sustained interest on the part of observers than the wooden masks or false faces. From the middle of the 17th century, when these carvings first caught the attention of the early travelers and missionaries, down to the present day, masks and the rituals associated with them have been a favorite topic of both amateur and professional ethnographers. Systematic investigation began in 1880 with the work of De Cost Smith and has been continued by William Beauchamp, Lewis Morgan, Arthur C. Parker, Harriet Converse, and Joseph Keppler. These students were primarily concerned with the role of masks in the religious patterns of the culture, and while they have provided abundant material on the mythological symbolism of the carvings and their use as ceremonial properties by the medicine societies, they tended to minimize or neglect other aspects.

The limitations of an approach solely in terms of religious function have been overcome to a considerable extent by the contributions of Frank Speck and William Fenton. Speck's attention has been directed toward the historical implications of masks. Through an analysis of masking as a culture complex common to many Indian tribes of northeastern America, he has traced the distribution and probable course of diffusion of masks in this region, thus placing the Iroquois materials in geographical and historical perspective. Fenton's treatment is, to date, the most comprehensive. He includes a consideration of the function of masks in the curative rites of the False Face Society, the historical problems related to the rise and spread of the masking complex, and is the first to approach the carvings from the standpoint of art. In his monograph "Masked Medicine Societies of the Iroquois," Fenton discusses the classification of formal types, the relation of these types to mythology and ritual, and the possibility of establishing local and tribal styles. He has also obtained information on the technical processes of carving, the sources of formal characteristics, and the role of the individual in devising new forms. Although his most recent paper on masking presents some data on these topics, much is as yet unpublished.

My study differs from previous investigations both in scope and intention, as it is limited to an examination of mask carving on one Iroquois reservation. The Onondaga Reservation was chosen because of its accessibility, and I began work with the assumption, derived from the literature, that masks, insofar as they were still made and used by the modern Iroquois, continued to serve the same function and carry the same meaning as they had in the past.

Once I was in the field, however, the problem to be investigated became more structured. Onondaga is situated on the outskirts of Syracuse and is a highly acculturated community. Subjected to continuous pressure from Western society for more than 300 years, these Indians have lost many of their aboriginal customs and have assimilated the technology and, in part, the social organization and values of the dominant culture. In view of the widespread changes which have occurred, two questions may be posed. What factors account for the persistence of a traditional art in an acculturated society? How have the changes which have taken place in the society as a whole been reflected in the art—in its function, its meaning, and its style? The answers to these questions are sought in an analysis of mask carving in relation to its present sociocultural context.

Some limitations on conclusions which can be drawn from the data are imposed by the nature of the problem and the lack of adequate tools to cope with it. Artists are often unable, even when they are willing, to verbalize their conceptions of art, since many of their mental processes take place below the level of consciousness (Bunzel, 1929; Boas, 1955, p. 155). As yet no specific techniques for overcoming this difficulty have been developed, so that full insight into such problems as the motivation of the artist, the way in which he develops or acquires his skill, and the particular kind of satisfactions which he derives from his work remains beyond the scope of the ethnographer.

The conditions under which I did fieldwork constitute another factor which must be taken into consideration. I was on the reservation for a little less than 2 months, a period of time insufficient for me to become known and accepted by the community. Many of the Onondagas are suspicious and somewhat hostile toward outsiders, and the fact that I was a woman who was attempting to investigate a man's art did not improve my position. All my informants seemed to find it strange and a little unseemly that a woman should be interested in woodcarving, which is undoubtedly one of the reasons why

I was unable to persuade one of them to teach me the essentials of the craft. Similar difficulties were encountered when I sought an opportunity to observe the technical processes of carving, although in this case the principal obstacle was the lack of activity in maskmaking during March and April, the months when I was at Onondaga.

In other respects, too, my position in the community was not ideal. Because of the relatively crowded living conditions in most of the homes and the general distrust of strangers, I had little freedom in my choice of living quarters. The only family which was both able and willing to take me in was Christian; the wife was White and the husband, though Indian, quite thoroughly westernized. Their circle of friends and acquaintances did not include Onondagas who continue to make and use the masks since these people belong to the "pagan," less acculturated, portion of the population. I was, therefore, not able to make contact with my informants on an informal, friendly basis, or to converse with them casually in a variety of situations, but was forced to seek them out with no previous introduction and depend on one or two fairly structured interviews. Although I attempted to secure roughly comparable data from each carver, I had little success with the older men who were for the most part unwilling to talk to me.

The fact that I had no knowledge of the native language constituted another handicap. Though not necessary for communication, it would have been an excellent means of establishing rapport. Furthermore, insofar as conceptualizations about art are verbalized, many of them may be phrased in Iroquois but not carried over into English, which means that they are lost to the observer who has no command of the native tongue.

I had hoped to obtain some information concerning the artistic standards of the carvers by showing them photographs of masks which have been made on the reservation during the last few years. This plan was blocked by difficulties of an interpersonal sort since after I had taken pictures of a group of Onondaga masks, the carver who had originally given me permission to do so was told that under no circumstances should he allow Whites to photograph them. He asked me to refrain from mentioning to anyone that I had already taken pictures, a request which obviously prevented me from showing them to my other informants. However, I was able to use photographs of Iroquois masks which I had obtained from museums, and I found them very effective as a means of eliciting the carvers' judgments and opinions about masks and as a rapport device. The mere fact that I possessed such photographs seemed to change my informants' conception of me from that of a stranger who asked prying questions to that of a person who had a genuine interest in masks and who, perhaps, knew something about them. This technique also led to more specific information, as it encouraged carvers to "free associate" about masks they had seen in the past, those they had made, and the ceremonies in which they are used. Invariably the Indians became more relaxed and talked more spontaneously after I had brought out the pictures.

The data from Onondaga were gathered and written up in 1950–51. Since that period, continued research has produced new evidence on the origins and historical background of Iroquois culture as a whole, and this has been incorporated in the monograph where relevant. The principal findings about the function and meaning of maskmaking on modern Onondaga, however, have not required reformulation and have, if anything, been strengthened by recent developments in other aspects of Iroquois life.

## PATTERNS OF ART IN IROQUOIS CULTURE

Until recently the Iroquois Indians were believed to have made their appearance in the northeastern portion of the United States relatively late in the prehistoric period. At the time of their discovery by Europeans, those known as the Five Tribes were settled in the northern part of New York State where they occupied an intrusive cultural and linguistic position in an area inhabited by Algonquian-speaking peoples. Certain elements in their culture suggested a southern origin: a horticultural economy, matrilineal clans, and a group religious system centered in an annual cycle of harvest festivals, and theories of provenience postulated a migration from the southeastern United States (Fenton, 1940 a, p. 164). Archeological evidence, however, has failed to demonstrate a migration route, and excavations over the last several years indicate an Iroquois development in situ from centers in southeastern Ontario and northwestern New York (Ritchie, 1961, pp. 30, 35). Indeed, the shamanistic traits in their fraternities and secret societies point toward the north.

The Iroquois lived in semipermanent villages of from four to five hundred inhabitants. The characteristic dwelling, known as the longhouse, was a large, rectangular, communal structure of poles sheathed with bark. The decay of these bark houses and the exhaustion of the soil necessitated a removal to a new village site every 10 to 12 years. Horticulture was the primary source of subsistence and was a cooperative enterprise carried on by the women. Corn, beans, and squash were the staple crops and were personified in the religious system as the three sisters who supported life. The men assisted in clearing the fields and supplemented the diet by hunting and fishing.

The basic social unit was the matrilineal family headed by the eldest woman or matron. These families were united into exogamous clans which were not totemic although they bore animal names—Bear, Wolf, Snipe, etc. Four clans constituted a phratry, and two phratries, a tribe. Marriage was monogamous and arranged by the matrons. Matrilocal residence, matrilineal descent and inheritance, and the independent property rights of the wife gave women a status equal or superior to that of men within the longhouse. Outside of the home, women exercised an indirect influence in politics and participated in most religious activities.

The political organization has been extolled by many western observers as one of the most advanced in aboriginal America (Morgan, 1851; Wallace, 1946). It consisted of a league of five originally autonomous tribes (Mohawk, Oneida, Onondaga, Cayuga, and Seneca) which were culturally distinct and spoke separate dialects. At some time late in the 16th century these tribes banded together in a confederacy for the preservation of peace and order. The organization they created reflected symbolically the structure of the longhouse and the kinship system. The most powerful tribes were accorded the status of "elder brothers" and were given special responsibilities: the Mohawk guarded the "eastern door of the Longhouse," the Seneca protected the western entrance, and the Onondaga living in the center were the Keepers of the Council Fires and the perpetual hosts for all meetings. The "younger brothers" were the Oneida, the Cayuga, and later, the Tuscarora, a southern Iroquoian-speaking people who joined the union in 1772. The League did not achieve unanimity of purpose and action until the Colonial Period (Hunt, 1940), but did succeed even in its early phase in preventing warfare among its members. Kinship ties helped to insure solidarity as clan affiliations crosscut tribal lines.

The League's constitution was based on a combination of myth and historical fact and was transmitted orally from one generation to the next. Authority was vested in 50 peace chiefs or sachems whose actions as a governing body were at all times subject to the force of public opinion. Although chieftainships were hereditary within particular families, the office was essentially elective. The matron, in consultation with the other adult women of the household, selected a candidate who was then confirmed by the clan council, the tribal council, and finally the federal council. Women also had the power to depose unworthy chiefs and sometimes acted as regents for those too young to hold office. The federal council assembled once a year at Onondaga to determine foreign policy, settle internal disagreements, and act as the final court of appeals. The chiefs voted by tribes and a unanimous decision was required. Oratory, which was highly esteemed by the Iroquois, played a prominent part in these sessions and, along with the games, feasts, and dances which always accompanied them, made a council meeting a time of social and ceremonial, as well as political, importance.

The central themes of Iroquois religion were fertility and health. A pantheon of deities, headed by the Great Creator and representing the beneficent and reproductive forces of nature, was opposed by the evil spirits who brought disease and destruction to mankind. Following the harvesting of each of the principal crops, an annual series of public ceremonies gave thanks to the deities through prayers, songs, dances, and offerings of food. Tobacco was used in most rites since it was a sacred plant, and smoking or burning it was regarded as a pledge of sincerity. The Keepers of the Faith, an elected priesthood, were responsible for the preparation and conduct of these celebrations, the most important of which was the Midwinter or New Year's Festival (also called the Feast of Dreams). Occurring in February and lasting a week, New Year's was a time of revelry when people, often in masquerade, went from house to house, demanding gifts and asking others to interpret their dreams. The carnival spirit was combined with religious solemnity in the games between the phratries, the dances, and the curative rites. The festivities culminated in the burning of a white dog, the spirit of which ascended to heaven carrying the prayers of the faithful to the Creator.[1]

A number of medicine societies, many of them secret, were dedicated to the art of healing and the exorcism of evil spirits. Each society propitiated a special class of supernatural beings and had its own rituals and characteristic paraphernalia. The Bear Society appeased the spirits of bears with offerings of tobacco; the Otter Society drove out sickness, caused by water animals, by sprinkling its patients with water; the False Faces cured with masked dances and hot ashes rubbed or blown on the body; the Little Water Company knew the songs and dances to revive the dying. Some societies restricted their membership to those who fell sick and called upon them or who dreamed of joining; others encouraged participation by anyone who wished to help in the curing process.

Witchcraft was another source of evil and was punishable by death; persons in positions of power, such as matrons and chiefs, were often suspected. Witches were thought to roam about at night, sometimes taking the form of animals and injuring their victims by charms or mere volition.

The plastic and graphic arts of the Iroquois did not attain the degree of complexity that was evident in other aspects of their culture. A practical people with a talent for organization, they were preoccupied with politics and diplomacy, and seem to have taken a greater interest in these activities than in the development and elaboration of material things.[2] Yet many Iroquois artifacts were notable for their simplicity and vigor, and for the manner in which form was adapted to function, whether domestic or ceremonial. In the decorative arts, designs and techniques were similar to those of the surrounding Algonquian tribes and were most probably derived from them (Speck, 1925, pp. 1–12).

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[1] At Onondaga the Burning of the White Dog has been obsolete for more than 70 years (Smith, 1888, p. 189).

The Iroquois worked in a variety of materials. Pipes and maskettes were carved in stone. Bone and antler were fashioned into combs, beads, rattles, and small figurines. Although the maskettes and figurines may have served as charms, their exact use is unknown; the forms are angular and unrefined with little or no detail. Pottery was made by the coiling process and was unpainted. The typical Iroquois pot had a globular body and a flaring collar ornamented only with incised lines, although toward the end of the 16th century there was a vogue for drawing crude faces at the corners of the rim. In contrast to the sculpture in bone and stone, clay pipes were modeled with naturalistic figures of men and animals; these effigy pipes have been judged by one student to be the finest of their type north of Mexico (Murdock, 1934, p. 300). Splints of black ash, bark, sweetgrass, and cornhusks were made into baskets and other containers, while braided or coiled cornhusks were used in the construction of mats, dolls, and masks. Clothes were of animal skins embroidered with geometric and curvilinear patterns worked in porcupine quills, moose hair, grass, and shell beads. Quantities of shell beads known as wampum went into the production of necklaces and belts. The designs were of geometric motifs and highly stylized figures which had a symbolic significance, for wampum was used as currency, as a record of tribal events, as a pledge of good faith, and as personal adornment.

Wood, being plentiful, accessible, and having sacred associations for the Iroquois,[3] was extensively used for tools, weapons, domestic utensils, game implements, musical instruments, and ceremonial properties. Although the majority of these objects were undecorated, some were expertly carved with figures or geometric designs. Especially fine were the spoons and bowls which were the cherished possessions of individuals who took them to the festivals for eating the sacred food. The handles depicted men and animals, either singly or in groups, and again a simple, abstract treatment of the forms was characteristic. Carvings were sometimes painted in polychrome, although for the most part the finish was that of the natural wood.

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[2] In Kroeber's opinion there have been some Iroquois specializations in material culture but none of a high order (1947, p. 92). Two other students believe the Iroquois were concerned with utility rather than dramatic effect and consider their art to be less highly developed than that of the Algonquian (Douglas and d'Harnoncourt, 1941, p. 154).

[3] The Sacred World Tree, symbol of peace and unity, figured prominently in Iroquois mythology and ritual and was a frequent motif in their decorative arts (Parker, 1912).

With European contact beginning in 1615, the Iroquois entered into a period of commercial and military expansion which brought about far-reaching changes in their culture. As middlemen between the colonists on the seaboard and the Indian tribes in the interior, they came to dominate the fur trade. Firearms obtained from the Dutch, and later from the English, enabled the League to develop the most powerful fighting force in the northeast. By 1700 they had conquered all the surrounding tribes and, through war or diplomacy, extended their influence from New England to Illinois and from the Ottawa River to Tennessee. Taking an active part in the intercolonial wars, they fought unceasingly against the French and their allies, the Canadian Algonquians, and were to a considerable extent responsible for the triumph of the English on the American continent.[4] The constant warfare, the wholesale adoption of captives with the consequent introduction of alien customs, and the close cooperation with the English, all had repercussions on Iroquois society. The economy shifted from horticulture to hunting, raiding, and commerce; militarism increased and warriors gained in prestige and political power; the efforts of missionaries began to undermine the aboriginal religion; and European trade goods became an essential part of material culture.

The effect of contact upon art was immediate and profound. Manifold changes occurred in native materials, techniques, and designs until, within a few generations, almost all Iroquois work showed some European influence. Certain arts died out completely. Such was the fate of pottery, which was soon made obsolete by the acquisition of metal containers. Work in stone and bone diminished and by the 19th century much of the skill in the handicrafts had been lost. The initial results of acculturation were not, however, wholly destructive. Some of the existing crafts were stimulated, at least for a time, and in one instance a totally new skill, silversmithing, was introduced.[5] With metal tools obtained from the Whites, woodcarving became easier. This craft reached its height in the 18th century and some authorities do not date the figures on bowls and spoons before that period (Beauchamp, 1905 a, p. 154). Better tools and new materials—cloth, glass beads, yarns, and ribbons—brought about a florescence in embroidery and the development of new designs. Geometric motifs became less common, giving way to elaborate and quasi-realistic floral patterns which indicate French influence (Speck, 1945, p. 62). Silversmithing was acquired from the Dutch in the 17th century and seems to have taken hold very quickly. Crosses, brooches, bracelets, and rings were made by the Europeans for the Indian trade and later by the Iroquois themselves. Form and decoration resembled work of European origin, circles, diamonds, hearts, and stars being the most popular designs. During the Colonial Period there was a smith in almost every Iroquois village and the craft flourished until the middle 1800's.

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[4] The alliance of the Iroquois with the Dutch and the English has been termed "the pivotal fact of early American History" (Hunt, 1940, p. 6).

[5] The introduction of trade goods had a similar effect on the arts of the Northwest Coast (Garfield, 1950, p. 69).

The American Revolution marked the decline of the League and the end of political independence. While the Iroquois were unable to come to a unanimous decision as to which side to support, most of the tribes fought on the side of the English, and at the close of the war about two-thirds of the population fled to Canada. Those who remained here were granted a portion of their original territory under Government treaty, although these lands were subsequently reduced by forced sales and the encroachments of White settlers. Today there are approximately 7,000 Iroquois living on seven reservations in New York State, and several thousand more, principally Oneidas, in Wisconsin. The population, which had suffered heavily from the wars as well as from alcohol and disease introduced by the Europeans, has been steadily increasing during the last 100 years. Intermarriage with the Whites began soon after contact, and it is estimated that the United States Iroquois are now about 55 percent fullblooded (Douglas, 1931 a). The League, although greatly weakened and deprived of many of its powers, continues to function and has undoubtedly been a factor in allowing the Iroquois to preserve their tribal identity. Acculturation has obliterated much of the aboriginal culture, but it has taken place at a rate that has allowed them, as a society, to adjust rather than disintegrate.

Although in many aspects of Iroquois life change has been resisted and the old ways have been retained, the material culture has largely succumbed to the pressure of western civilization. As a result, many of the arts have lost their function in the society, and, in most instances, when they have not disappeared completely, they have been reduced to the production of curios and knickknacks for the tourist trade. A number of the old artisans have died, and there is little incentive in the younger generation to continue the traditional arts or to institute new ones. An effort to remedy this situation was undertaken in 1935 when the Indian Arts Project, sponsored by the Rochester Museum of Arts and Sciences, was established. Operating as a relief measure under the Federal Government, the project was carried on for 6 years on two New York reservations: Tonawanda and Cattaraugus. With the help of the few craftsmen who still remembered the old techniques, some of the Iroquois arts were revived: bead weaving, quill embroidery, pottery, and woodcarving. This venture has been moderately successful in reestablishing high standards of workmanship and in providing an outlet for native products, but it must be noted that the initial stimulus came from the outside, and that, for the most part, the market is White rather than Indian.

## MASKS IN IROQUOIS CULTURE

### ORIGIN AND ANTIQUITY

While it is well established that woodcarving is a traditional Iroquois art dating back to the prehistoric era, there has been considerable disagreement among students as to whether the wooden masks or false faces are an indigenous and ancient part of the culture.

Questions concerning the origin of false faces are but part of the more general historical problem of determining the center of the masking complex in the Eastern United States. According to Dall (1884, p. 145) the use of masks by Indians east of the Mississippi was rare and did not form a prominent part of their festivals or customs. Although this statement is inaccurate, it is true that an uneven distribution of masks prevailed among the tribes of this region. Masks have been recorded only for the Iroquois of New York, the Hurons of southern Ontario and the extinct nations affiliated with them, some of the Algonquian tribes of the Atlantic slope, the Iroquoian-speaking peoples of North Carolina (the Cherokee), the Siouan tribes of the southeast, and the Creek (Seminole). In view of this distribution and the fact that the Iroquois appeared to occupy an intrusive linguistic and cultural position in the northeast, Fenton (1941, p. 416) originally suggested three possibilities: Iroquois masking may be a diagnostic trait pointing to their alleged southern origin; it may be related to northern shamanism and the use of masks across the Arctic littoral; or it may have originated with the Iroquois themselves. He postponed final judgment on this question, but was inclined to believe that the Iroquois acquired their masks from the north and that the immediate source was the Huron tribes.

Speck's conclusions also are tentative and differ from those of Fenton in that the former considers the Iroquois to have been the agents of diffusion rather than the recipients. His opinion is based on the distribution of masks in relation to the stationary wooden face images which were common throughout the middle Atlantic Coast region. Although the southern coastal Algonquians only had these stationary faces carved on posts, and the northern Iroquois and the Cherokee had only portable masks, the Delaware and related Algonquian peoples who lived adjacent to the Iroquois had both types of images. Therefore, Speck (1945, pp. 74–76) concludes that in early times: the tribes in the central sector of the eastern Algonquian territory from the Hudson River to the Carolina Sound area practiced certain rites connected with graven post images; the early Iroquois performed rites with masks distinct from the usages of the Algonquians; and the mask complex gradually spread to the nearby Algonquian tribes who adopted it in addition to their own stationary icons. Masks, then, were presumably an indigenous trait which the Iroquois brought with them when they migrated into the northeast.

Historic depth, like origin, has been a subject of controversy, and again two opinions prevail. Some believe that false faces were used by the Iroquois before the contact period, while others date their introduction late in the 17th century. The first historic record of masks of the Iroquois type comes from the French Jesuits who observed them among the Canadian Hurons in 1637, where they were worn in dances to drive away pestilence and were hung on poles at the top of each cabin when not in use. However, Jesuit accounts of similar ceremonies at Onondaga at approximately the same time make no mention of masks of any kind, and although the Onondaga were apparently holding masked dances by 1676, there is no assurance that the masks were of wood. The first positive evidence of false faces among the New York Iroquois comes from De Nonville in 1687. Writing about the Seneca he says, "They make some very hideous masks with pieces of wood which they carve according to their fancy . . . one foot and a half wide in proportion. Two pieces of kettle very neatly fitted to it and pierced with small holes represent the eyes. . ." (Beauchamp, 1905 a, p. 184). In 1743, this type was seen at Onondaga and false faces were recorded after the Revolutionary War as being numerous among all the Iroquois tribes.

The fact that the first travelers and missionaries found no public use of masks, and for a long time knew of none among the Iroquois, led Fenton (1941, pp. 412–416) and Beauchamp (1905 a, pp. 184–185) to the conclusion that false faces and their rituals made their appearance among the Seneca in western New York not earlier than the middle of the 1600's and from there spread slowly eastward to the other four tribes. Those students who take issue with this theory find support for the antiquity of masks in archeological materials. Parker (1909, pp. 181–182) cites the small stone masks and the faces on pots and pipes, some of which he takes to represent masked figures. In his opinion, this evidence and some accounts of idols in the early 1600's that may refer to masks are proof that the Iroquois masking complex can be dated before the period of White contact. Converse and Keppler (Keppler, 1941, p. 19) take the same view and point out that the failure of early writers to mention masks is no guarantee that they did not exist at that time, as it is probable that the first Europeans were never permitted to see a mask or to witness the more secret ceremonies in which they were used.

The new archeological evidence bearing on the problem of Iroquois provenience has done much to resolve previous differences of opinion. The probability that Iroquois culture originated and developed in New York State, and the discovery of representations of masked faces on clay pipe bowls in prehistoric Iroquois sites near Onondaga, offers support to those who insist that masking was an indigenous and ancient trait.[6] Fenton's latest discussion (1956, p. 351) takes these facts into account, and he is now in substantial agreement with Speck, viewing the early Iroquois as a center for the development of portable masks and as possible agents of diffusion to other areas.

Complete certainty on the question of origin and antiquity may never be achieved. The climatic conditions of northern New York prohibit the survival of direct evidence in the form of wooden masks, and the reports of early European observers are equivocal in that they are incomplete and open to different interpretations. Careful historical reconstruction through research into the mask complex as it exists today among the Iroquois and neighboring tribes is still needed. If, for example, it could be demonstrated that the masks and rituals of the northern Iroquois have more traits in common with Iroquoian-speaking peoples to the south, the Cherokee, than they have with those of the Algonquian peoples adjacent to them, it would provide confirmation for the hypothesis that the Iroquois possessed masks in the prehistoric period.

Regardless of what can or cannot be proved in the future, the fact remains that masks have become deeply embedded in mythology and ritual and can be fully documented as a significant part of Iroquois culture for almost 300 years. Furthermore, the "idols" mentioned in the earliest accounts of travelers indicate that although the masks themselves may not have been acquired until late in the 17th century, the notion of representing supernatural beings in wood was neither incompatible nor foreign to the Iroquois of the prehistoric era.[7]

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[6] Wray (1956, pp. 7-8) points out the resemblance between the stone and shell maskettes present in all early Seneca sites and modern mask types.

[7] In his journal of 1634-35, Arent van Curler reported that "the (Mohawk) chief showed me his idol; it was a head with teeth sticking out; it was dressed in red cloth. Others have a snake, a turtle, a swan, a crane, a pigeon or the like for their idol, to tell the fortune; they think they will always have good luck in doing so." [Wilson, 1896, p. 88.]

## THE FALSE FACE SOCIETY

Although one of many religious organizations concerned with the preservation of health, the False Face Society has always enjoyed preeminence among the Iroquois, and on some reservations it is the only medicine society which has persisted up to the present day. Its particular function is the propitiation of the gods of Wind and Disease, a class of evil spirits greatly feared for their power to send plagues and pestilence among men. These supernatural beings are not named individually but are simply called False Faces; the Onondaga word is *Hodo'wi*, a term also used for those masks which represent the spirits. They are usually described as elusive creatures who have neither bodies nor limbs, only hideous faces which paralyze all who behold them. In ancient times they were occasionally glimpsed by hunters in retired parts of the forest where they darted from tree to tree, their long hair snapping in the wind. At Onondaga they were said to live in a great cave where there were stone images carved in their likeness and an atmosphere so charged with malign influences that anyone who dared to enter was immediately stricken with sickness (Smith, 1888, p. 187).

Of the several legends recounting the origin of the False Face Society, that most generally known among the Iroquois concerns a test of magical power between the Great Creator and the first *Hodo'wi*.[8] Boasting that it was he who ruled the world, the *Hodo'wi* attempted to prove his superior strength by summoning a distant mountain. When he failed to accomplish this feat, the Creator caused the mountain to stand directly behind the *Hodo'wi* and then commanded him to turn around. Angrily doing so, the *Hodo'wi* struck his face violently against a rocky ledge, breaking his nose and twisting his mouth with pain. In punishment for his boastfulness he was forced to suffer this distorted visage, and to help human beings combat sickness and other evil influences. It was he who first instructed men in the art of carving masks reminiscent of his own features and taught them the ceremonies in which they are used. The Seneca say he still lives on the rim of the world where he walks with great strides, following the path of the sun. He carries a long staff and a giant mud turtle rattle, and his face is red in the morning, black in the afternoon (Fenton, 1941, p. 420).

Originally the False Faces were a true secret society. When the members appeared in character they were always masked and their names were known only to their leader, a woman who had charge of the regalia. Initiation and exodus were by dreams. To fall sick and dream of the *Hodo'wi* indicated eligibility to be cured by the society. This constituted initiation, and membership ceased only when one dreamed of release.

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[8] This legend has been recorded by Parker, Keppler, and Fenton, and was repeated to me several times at Onondaga.

The rise of Handsome Lake,[9] a preacher and prophet of the early 1800's, brought about a period of suppression and persecution for all the medicine societies. Claiming that they were working great harm to men and animals, the prophet demanded that tobacco be thrown into the fire and the companies disbanded. The chiefs met in council and complied with his order, but because the tobacco ceremony was omitted, many members of the societies declared the action of the council illegal. Branded as witches, they continued to hold their meetings in secret, and their very existence was concealed, both from White investigators and the Indian converts to the new faith. However, as the religion of Handsome Lake spread and was accepted by an increasing number of the Iroquois, it became more conservative. Gradually the new beliefs blended with the old and the tabooed societies were able to come out from underground. They began to hold their rituals openly again and to enter into public ceremonies, until eventually even the adherents of Handsome Lake joined without qualms. It was about this time that the policy of the False Faces toward membership underwent a change. Secrecy in regard to the identity of members was no longer considered so essential and the emphasis on dreams as a prerequisite for initiation became less pronounced. By 1900 on Onondaga, it was enough to show some symptoms of False Face sickness and make a feast (Smith, 1889, p. 279). Typical symptoms included ailments of the shoulders, joints, and head, especially toothaches, earaches, nosebleeds, and inflammation of the eyes.

Although there are local variations in False Face rituals, the essential elements are common to all the Iroquois and have changed little over the course of the years. They are best preserved among the Seneca, to whom the other tribes tend to look for the correct forms. In addition to holding private curing ceremonies, the False Faces appear publicly three times during the year. In the spring and fall they exorcise disease from the reservations, visiting the homes of all believers, where they stir the fire, sprinkle or blow ashes on the inmates, and dance. In return, they are given tobacco and corn mush which they carry away with them in kettles. A good deal of levity may enter into these proceedings as some of the band indulge in antics, rush about the house, try to upset the stove, and in general cause havoc.

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[9] Handsome Lake was a Seneca who had come under the influence of Quaker missionaries and experienced a series of revelations in which God instructed him to lead the Iroquois out of the degenerate condition into which they had fallen. He preached against witchcraft, whiskey, and the wholesale acceptance of White customs. His teachings are embodied in over a hundred moral injunctions, known as the Code of Handsome Lake, which are memorized and recited by religious leaders.

Besides the masks, they wear old, torn clothes which they sometimes stuff with tin pans to make them more grotesque. Each member carries a rattle of turtle, horn, or bark, while the leader, who is occasionally disguised as a woman, has a giant turtle rattle and a long staff to which miniature masks are attached. The third appearance of the False Faces occurs during the New Year's Festival, when they petition the *Hodo'wi* to withdraw the sickness for which these spirits have been responsible during the past year. Again they blow ashes, dance to the accompaniment of rattles, and beg for tobacco. Several False Faces, known as Doorkeepers, prevent anyone from leaving the ceremonies, and those who refuse to dance are thrown down, rubbed with ashes, and subjected to other indignities. Fenton has pointed out that individual talent in dancing and acting constitutes much of the effectiveness of these rituals. When an Iroquois dons a mask he behaves as if he were the supernatural being which he represents, acquiring its powers and dramatizing its attributes. He may even come to believe that he is that being and while the phenomenon of possession, a widespread psychological effect of masking, is probably rare among the modern Iroquois, cases have occurred within the memory of the present generation (Fenton, 1941, p. 422).

In ancient times carving was itself a religious ceremony surrounded by rituals and taboos. Masks were hewn from the trunk of a living tree in order that they, too, might be alive and contain the spiritual qualities attributed to the World Tree, symbol of peace and unity. Basswood was preferred because its fibers were absorbent and were considered to have remedial virtues. Having selected a tree, the carver burned tobacco at its roots, related the legend of the first False Face, and asked the tree for its life. The mask was then outlined, the features roughly blocked out, and the piece split away from the trunk. If the mask did not break and the basswood remained unshaken, it was proof that the tree had acquiesced to the appeal for its life. Sexual continence on the part of the carvers was necessary for a period both before and after the ceremony at which no ritually unclean person was allowed to be present.

This method of carving has not been preserved by the modern Iroquois and today the curative powers are imparted to the masks after the technical processes have been completed. In a ceremony called "doctoring," tobacco is burned, a bag of it is attached to each mask, and the appropriate words are spoken over them. This constitutes the initiation of the carvings into the False Face Society.

Once the masks have been initiated they have spiritual powers that make them dangerous if they are not treated with great care and respect. They do not like to be neglected, and unless they are used frequently they must be talked to, fed mush, and annointed with sunflower oil. When they are put away it must be face downward, as to be laid with the face up intimates that they are dead, which greatly offends them. If masks are hung on the wall, they should be covered or turned inward lest they cause possession. Some have special powers to warn their owners of impending sickness or death, which they do by sweating, falling from the wall, or speaking out; one old Seneca mask was thought to be able to instruct newer masks and was laid away with them for that purpose. Other false faces are notoriously bad tempered and hard to please. These are known as "poison" and are a source of much trouble and anxiety to their owners as they must be worn often and require a great deal of tobacco. To mock any mask, to speak disrespectfully to it or of it, brings dire consequences on the offender. Illness or a crooked face result and can be cured only when the mask is used in a ceremony and propitiated with an offering of tobacco.

## STYLE

There is little stylistic relationship between the masks and the other woodcarvings of the Iroquois. Whereas simplicity and restraint are characteristic of the figures on bowls, spoons, and other objects, the masks show an elaboration of form and a concern with detail that sometimes tend toward the grotesque. Although this disparity in style seems to place false faces outside the main traditions of Iroquois art and could be attributed to the fact that they were acquired from another culture, an equally plausible explanation lies in the relation of form to function. As portraits of the powerful and dangerous *Hodo'wi*, the masks must reflect the attributes of these beings, and so it is not unnatural that they should have an emotional quality that is absent from carvings which serve a less dramatic purpose.

Although differing in detail, all false faces share certain characteristics which give them the same general effect and constitute a single style. The carving is in high relief and the features, though distinctly human, are always distorted or exaggerated. The eyes are deeply set and rimmed with wide pieces of sheet metal, while the nose is usually long with a high bridge and may be bent to one side. The most variable feature is the mouth which may be twisted, puckered, smiling, distended, or flaring; teeth or a protuding tongue are frequent additions. Most masks have deeply cut wrinkles around the mouth or eyes, and some have a crest of spines on the forehead or nose. Horsehair, either black or white, is fastened at the top and hangs down in long locks on each side of the face. As a rule, masks are painted one solid color, either black or red. Occasionally, however, both red and black will be used on a single false face, the coloration being divided by a vertical line down the center of the mask.

A second variety of Iroquois masks not previously mentioned is the husk faces which symbolize the three spirits of agriculture—corn, beans, and squash—who taught men the art of cultivating. These masks are by no means as numerous as the wooden type, since the medicine society in which they are worn is almost extinct; a few, however, are used for curative purposes in the False Face rituals. Made of braided cornhusks, which are woven or sewn into crude human faces with holes to represent the eyes and mouth, these masks are quite flat and look somewhat like animated doormats. Other masks that occasionally appear among the Iroquois are those depicting animals—bears, pigs, and birds—which are carved in a naturalistic fashion and may be survivals from ancient medicine societies, and a buckskin mask with a long nose that is used to frighten disobedient children. Maskettes in wood or cornhusk resemble their larger prototypes to which they are often attached. They are also kept as personal charms, used as tokens of membership in the society, and made for children when they are cured by the False Faces.

The first attempts to classify the wooden masks were made in terms of function with little regard as to how this might determine variations in the forms or the treatment of details. Converse recorded a number of types among the Seneca which were named according to use: Live, Doctor, Wind, Scalp, Clan, Harvest, Maternity, Night, Completing, and Counselor masks. This classification has been accepted by Keppler, the friend and protege of Converse, but it has not been substantiated by any other investigator. Morgan, Harrington, Parker, and Fenton have found only four classes based on function: Doctor, Doorkeeper, Beggar or Dancing, and Secret masks.[10] Since these students worked among the Seneca both before and after Converse, it seems likely that she overinterpreted her material.

Formal characteristics as a basis for segregation were not seriously considered until Fenton began his series of systematic studies among the Seneca in 1936. Finding that the descriptions of collectors and museum curators were at odds with one another as well as in disagreement with the ideas held by the Indians themselves, he undertook to group over a hundred masks according to certain formal criteria and then checked this classification against the concepts of his informants (Fenton, 1941, pp. 397–429). He discovered that the mouth, which as the most variable feature is a likely base for distinguishing formal types, is the criterion most frequently used by the Seneca who divide their masks into the following groups: crooked-mouth, hanging-mouth, straight-lipped, spoon-lipped, tongue-protruding, smiling, whistling or blowing, divided (red and black), and blind.

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[10] According to Fenton, Doctor and Doorkeeper masks are the most sacred and take the leading parts in the curative rituals as they symbolize the first False Face. Those of the Beggar class represent the Common Faces of the forest and are less powerful though they are also used for curing. Secret masks never appear in public ceremonies; their function and symbolism are unknown.

Combined with other features, mouth types constitute local and tribal styles, ceremonial classes, and mythological stereotypes. Crooked-mouth masks with a bent nose and many wrinkles are most common among all the Iroquois and portray the distortions suffered by the original False Face as described in the legend. Together with spoon-lipped masks, which are generally confined to the Seneca, they belong to the Doctor and Doorkeeper classes. Faces with a protruding tongue appear most often among the Onondaga, whereas those with a hanging mouth and a crest of spines on the forehead are considered to be "classic Seneca." The Beggar or Dancing class is the most plastic as it contains a variety of types. Smiling and whistling masks fall into this group; among the Onondaga they are apt to be heavy with thick lips and puffy cheeks. The divided masks that represent a "god whose body is riven in twain" and who is half human, half supernatural, are unfamiliar to most of the Iroquois, and Fenton believes that they may have been acquired fairly recently from the Delaware. Blind masks are an enigma to ethnographers. They have no eyeholes and were formerly used in the rites of the Idos medicine society, where the wearer demonstrated his ability to find and identify hidden objects. Today they never appear in public and the Indians are unwilling to talk about them, a secretiveness Fenton attributes to lack of knowledge, for blind masks have been ceremonially obsolete for over a century. Except in the case of the divided mask where red and black symbolize east and west, color seems to be irrelevant and is not correlated with any other feature. Although some Iroquois attribute greater power to black masks while others favor the red, the two colors are equally common.

As might be expected, Fenton found that the Seneca do not adhere rigidly to their own classification; types are not definable in terms of form alone. Since masks are usually carved according to dreams or visions, the conception portrayed by the carver may be ignored by the subsequent owner of the mask. Most masks regardless of form rise in status with age and use, so that many Beggar masks are in time promoted to the role of Doctor or Doorkeeper. Some Indians refuse to recognize any classification, saying that there are as many mask types as there are people.

One general observation may be added to Fenton's discussion, as it pertains to a consideration of tribal styles. While it is quite possible to plot the spatial distribution of variations in formal characteristics and so determine which masks are today most prevalent in a particular locality, there is little assurance that these types taken together comprise a traditional tribal style. For almost 200 years the Iroquois have been living on reservations on which two or more of the five tribes are represented.[11] This proximity has tended to break down the minor differences between them and there is no reason to suppose that art forms escaped the process of intertribal acculturation. Even before the reservation period, the League brought the Iroquois into close association, socially and religiously as well as politically, and provided ample opportunity for the observation and exchange of ceremonial properties such as masks. The assumption of definite and distinct tribal styles in the precontact period is, therefore, a doubtful one. Certainly today the stylistic differences that are characteristic of the various reservations must be taken as the outgrowth of fairly recent local developments rather than the persistence of ancient tribal traditions.

There is very little material on which to base an accurate account of the stylistic development of Iroquois masks. Because of the perishable nature of wood, a hundred years is probably the maximum age of any mask now in existence, and many of this vintage were destroyed by the Christians and the early converts of Handsome Lake who were taught to regard them as idols and "devil faces." Of those that have survived, either on the reservations or in museums and private collections, few have been accurately dated. The carvings themselves offer no clues to age, for many modern masks are given an antique finish to make them look old. Historical records as a source of material by which to chart fluctuations in style are of limited value, since early descriptions of masks are too few and too general to permit a detailed reconstruction.

Keppler (1941, p. 18) has ventured the opinion that at first all masks were carved in the likeness of the original False Face, depicting his twisted mouth and broken nose. Divergence from this basic type occurred as certain formal characteristics which proved ritually efficacious were emphasized and others that seemed useless were eliminated. Further variations may have evolved when the carvers sought to reproduce the mysterious maladies which distort the human body, or when they attempted to frighten the spirits of disease by heightening the fearsome appearance of the masks.

Keppler's theory of development has some basis in the origin legend and the present widespread distribution of crooked-mouth masks, although there is little evidence to support his assertion that the variety of masks observed today all evolved from a single basic type. Certainly, style was affected by the function and meaning of the carvings. Fenton (1956, p. 352) considers the false faces to be "grotesque portrayals of specific disease somatotypes," and he points to the striking parallels between the stylistic features and the motor behavior of the dancers on the one hand, and the illnesses of face and body which the rituals seek to relieve.

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[11] Cattaraugus Reservation, while predominantly Seneca, also has the Cayuga and Onondaga; Tonawanda: Seneca and Cayuga; Allegany: Seneca and Onondaga; etc.

European contact had an influence on style, if for no other reason than that the introduction of metal tools revolutionized carving techniques. The exact nature of the changes which followed, or how quickly they took place, cannot be described, since there are no accounts of masks before 1678, some 80 years after contact had been established. It may be assumed that the carvings became more ornate and detailed, that the workmanship became more finished, and that many new types, previously too difficult to attempt with the old methods of charring and scraping, were developed.[12] Spoon-lipped masks and those with widely flaring mouths may be examples of such innovations. As better tools made woodcarving less arduous and time consuming, more people may have engaged in maskmaking, which would be another factor in expanding the range of variability. New and more spectacular effects were also achieved through the use of new materials. Buffalo manes and braided cornhusks which had served as hair were replaced by long horsetails, eyes were rimmed with sheet metal instead of clamshells, and bright commercial paints were substituted for earth pigments.

During the last two centuries the majority of false faces have undergone few fundamental changes, although the trend toward diversification and the adoption of new forms has continued. Some innovations seem to have been inspired by western rather than native concepts, such as the horned masks devised by a Seneca artist in 1900 which have a diabolical appearance and may, according to Fenton, be caricatures of White gods. Very modern types include representations of Felix the Cat, Mickey Mouse, and Charlie Chaplin that have been added to the Beggar class, while masks with cigars in their mouths are among those made professionally and offered for sale at Cattaraugus. False faces of this type are relatively rare, however, as compared with the number carved according to the old patterns. In the latter, the basic features, the proportions, and the treatment of details combine to produce an effect differing little from that described by John Bartram in 1743.

> We were entertained by a very comical fellow in as odd a dress as Indian folly could devise. He had on a clumsy vizard of wood, coloured black with a nose four or five inches long, a grinning mouth set awry furnished with long teeth, round the eyes circles of bright brass, surrounded by larger circles of white paint, from his forehead hung long tresses of buffalo hair, and from the catch part of his head ropes made of plaited husks of Indian corn . . . . In my whim I saw another vizard of this kind hung by the side of one of their cabins in another town. [Bartram, 1751, pp. 43–44.]

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[12] The introduction of metal tools had essentially this effect on woodcarving of the Northwest Coast.

This description substantially agrees with that of Morgan in 1851, with the accounts given by Beauchamp, Converse, and Parker in the early 1900's, and could be applied to many of the masks which are carved today.

## MASK CARVING AT ONONDAGA RESERVATION

### THE COMMUNITY

Onondaga Reservation lies in a valley 1 mile south of the city limits of Syracuse, not far removed from the ancient tribal site on Onondaga Lake. The Indians were guaranteed possession of their lands by Government treaty in 1795, the terms of which provide an annual allowance of salt and cloth to every member of the tribe. Considerably reduced by forced sales in the early 1800's, the reservation now encompasses about 6,100 acres of farmland and scrub timber. The population is a little less than a thousand, an increase of almost 100 percent over the last 10 years owing to an influx of Iroquois from Canada who have come seeking jobs in Syracuse.

To a casual observer, Onondaga is not markedly different from other rural areas in this part of the State. The small framehouses are similar to those of the surrounding regions, and although many are old and some in a dilapidated condition, others are modernized to the extent of having plumbing and electricity; radios are common and television sets are not unusual. Even the Council House, the traditional focus of political and religious activities, is a commonplace, whitewashed structure resembling a country schoolhouse. Other public buildings are three Protestant churches, the Federal grade school, and the National Youth Association building which was constructed by the Government during the depression and now serves as a community center. For food and other necessities, commercial amusements, and education beyond the primary level, the Indians are dependent on Syracuse or Nedrow, a small White community on the edge of the reservation.

Although Onondaga is not a prosperous community, neither is there much real poverty. Most families own their own homes and hold an acre or more of land which belongs to the tribe and is tax free. Some raise a few crops for their own use, but much of the soil is poor and no large-scale farming is done. The principal source of income is employment in Syracuse where 90 percent of the men, and some of the women, have jobs in factories or shops or on construction gangs; a large proportion of this number, however, is periodically on Government relief.[13]

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[13] It was my impression that the majority of these men were unemployed by choice rather than necessity, as work is not difficult to obtain today.

Despite the fact that the Indians have taken over the material culture and subsistence patterns of the Whites, traditional Iroquois customs persist in some aspects of their lives. Insofar as the reservation is allowed autonomous government, it is controlled by a council of 26 chiefs who are chosen according to the ancient precepts of the League; women nominate their sons if they are worthy. Although somewhat disorganized and subject to internal dissension, the council constitutes a strong conservative block, holding tenaciously to the old ways and opposing innovations of any kind. Christians are not allowed to hold office even if they are eligible for chieftainships in the maternal line. Other evident retentions are: the native language, which is spoken by a segment of the population; the clan and moiety systems, which function in the seating of the chiefs in the Council House; and the religion, most evident when one moiety gives a ceremony for the other. Some of the aboriginal games have survived—gambling with dice made of peach stones or deer buttons, and "snow snake" in which a long slender rod of wood is thrown in a trough of snow. Lacrosse, the national sport of the Iroquois, still arouses enthusiasm; the Onondaga have their own team which plays at other reservations and occasionally at neighboring universities.

Although the Christian missions are strongly entrenched at Onondaga, the Episcopalians having the majority of converts, approximately one-third of the community adheres to the old forms of worship as modified by the teachings of Handsome Lake.[14] Known as the Long House or Council House religion, it includes the recitation of moral precepts from the Code, the confession of sins, and the celebration of the traditional festivals. The False Faces are an integral part of Council House creed and ritual, as they continue to appear at the New Year's Festival when they dance and cure with ashes, to make their rounds of the reservation in the spring and fall, and to hold private ceremonies for those who request their services. Theoretically all members have at one time undergone treatment by the society, but many who have not been initiated in this manner participate in the curative rites and so have come to be regarded as part of the band. Possibly it is the relaxation of the original requirements for membership that is responsible for the uncertainty in the minds of the Onondaga as to the present size of the society. Estimates range between 13 and 100, the former probably being the number who have been formally initiated. In recent years a White man from Syracuse has been admitted. He visits the reservation frequently, takes an active part in the rituals, and is considered by his associates in the society to be an authority on the meaning and use of the masks. In this sense he is more "Indian" than the Indians themselves, insisting that the ancient concepts be followed and the ancient forms observed.[15]

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[14] This number is not an actual count but an estimate given to me by the woman who has charge of the Episcopalian mission. She considers the Onondaga to be one-third Christians, one-third pagans, and one-third nothing in particular.

The rivalry and suspicion which exist between the Christian church and the Council House do not prevent a frequent change from one congregation to another on the part of many of the members. Some vacillate continually between the two, forsaking the church when they feel they have been slighted or insulted there, only to return when something upsets them at the Council House. Even those who remain permanently affiliated with one religious system tend to take advantage of what the other has to offer. Thus Council House people usually bring their children to be baptized at the church, while many "good" churchmen who have been Christians for generations attend the festivals at the Council House and call in the False Faces when the White doctor fails to effect a cure. This inclination to "play it safe" is strikingly exemplified in the not uncommon practice of giving the deceased two separate services; a Christian burial and a Dead Feast at the Council House. Nor is a belief in witchcraft confined to one religious group. Although the fear of being "witched" and the conviction that some persons have the power to transform themselves into animals are more prevalent among the Council House people, the Christains too sense the threat of unseen evils. They may laugh at the more "backward and superstitious Indians"; but they do not care to walk out alone at night, have an uneasy feeling that a screech owl is an omen of impending danger, and tell stories of being chased by creatures that are half-human, half-animal.

The traditional arts have not fared as well under the impact of acculturation as have the religious and political systems, since the acceptance of western material culture leaves most of them no function in the society. Under the auspices of the National Youth Association, classes in Indian handicraft were held for a time at the community center by an Onondaga woman who has taught in summer camps. These classes did not include instruction in mask carving, and since they did not succeed in arousing much interest, they have been discontinued. Other than this there has been no organized attempt to develop or preserve the old skills and, with the exception of woodcarving, those which have survived do so because they have a commercial value as Indian souvenirs. Many of the women do a little beadwork at home. The belts, bracelets, lapel pins, and moccasins which they make are as much "Indian" as Iroquois in design; the traditional floral patterns are rarely used while such Plains motifs as the arrow and the swastika are combined with simple geometric forms. More nearly related to the old culture are the cornhusk dolls and baskets, but colors in the latter are garish and the shapes adapted to the practical needs of the customers. One basketmaker, commenting on the fact that much of the work is neither "true Iroquois" nor of a high quality, put the blame on the necessity of conforming to White standards. "Most people don't appreciate authentic work. They judge by the size, not the quality, and want the most for the least money." The products of the women, along with bows and arrows made by the men, are sold at the New York State Fair held once a year in Syracuse and in roadside stands put up on the reservation to attract the summer visitors.[16] Almost the only craft which is not produced exclusively for the tourist trade is woodcarving. Some of the men carve lacrosse sticks, snow snakes, unornamented wooden paddles for stirring food, and masks, all of which are still used by the Council House people. However, with the exception of lacrosse sticks, which are sold to university teams as well as to local players, none of these articles is made in any quantity.

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[15] This man, Pete Hest, gave me little information beyond the fact that he likes Indians and has been associated with them at summer camps where he picked up his interest in Indian lore. He is regarded somewhat suspiciously by many of the Christians on the reservation who wonder what he is up to.

The intermingling of Iroquois and White patterns as it exists at Onondaga today, particularly in the area of religion, seems to suggest that there is no clear-cut line between those Indians who have accepted western culture and those who have resisted some aspects of it. Yet there is a differential reaction to acculturation which is based, although not invariably, on tribal affiliation and which follows from the relationship between Onondaga descent, politics, religion, and language. Active participation in native politics is directly dependent on tribal affiliation and is restricted to Onondagas because chieftainships are hereditary within the tribe. The aboriginal religion is indirectly linked with Onondaga descent in two ways: by the rule that chiefs must belong at least nominally to the Council House, and by the fact that Christians are more apt to marry out of the tribe. The association between linguistic patterns and descent is more tenuous, but it seems reasonable to suppose that regular attendance at the Council House, where the old language is used, would encourage its retention.

Those who are not Onondagas comprise a large proportion of the population, since they include the members of other Iroquois tribes living on the reservation as well as the descendants of those who have intermarried into these tribes or with the Whites.[17] These people have no voice in the government and are allowed to hold land only if one of their grandparents was an Onondaga. Thus they are disposed to discard the aboriginal values and adopt western ones, as by birth, if not by choice, they are already marginal to the old culture. As one of this group put it, "Anyone not an Onondaga is always regarded as an outsider."

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[16] Any attempt on the part of an outsider to compete with these local establishments is deeply resented, as in the case of a woman who has recently arrived on the reservation, set up a large crafts stand and undercut the other craftsmen. It is rumored that she buys her wares cheaply in Canada, and she is generally disliked for "muscling in"

There is, of course, a great deal of variation within the two groups, and possibly a careful analysis would reveal the existence of a number of subgroups, overlapping but distinguishable on the basis of individual reactions to change.[18] Nor can it be claimed that tribal affiliation is the only or even the most important determinant of acculturation, although it seems to carry a greater weight than any other obvious factor such as age.

There are indications that the compromise between the old culture and the new, and between the people who identify with them, is an uneasy one both for individuals and for the community as a whole.[19] The suppressed animosity between the church and the Council House, the ambivalence evident in the sudden shift from one religion to the other, the conflict between those who wish to preserve the native traditions and those who wish to make the reservation "progressive," and a certain defensiveness on the part of those who have clung to the old ways, are some of the more overt manifestations of the tension and anxiety which result from the attempt to strike a balance between two divergent cultures. Among some of the Indians, particularly the younger generation, Iroquois retentions seem to be one of the reactions to the insecurity which they feel in their situation—a self-conscious return to the aboriginal culture which they have idealized and which they believe offers a safer, more satisfactory way of life. This nativism, which is individual, spasmodic, and unorganized, is an important element in mask carving and will be discussed subsequently in greater detail.

## THE CARVERS

Maskmaking at Onondaga is neither a profession nor a full-fledged craft recognized by the community as such. Rather, its status is that of a part-time activity carried on by a small group of men who do not depend upon it as a source of income. Those who engage in the art

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[17] Since descent is matrilineal, this does not include the offspring of marriages in which the woman is Onondaga. In these cases, even if the father is White, the children retain their tribal membership.

[18] The categories which Voget (1951, pp. 220–231) used in his analysis of Iroquois society on the Caughnawaga Reservation in Canada might, with more careful investigation, prove to apply equally well to Onondaga. On the basis of differential reactions to acculturation, he divided the community into four groups: native, native-modified, American-modified, and American-marginal.

[19] By "identify" I mean that people define themselves as belonging to a particular group (in this case Indian or White) and refer their behavior to the values which they attribute to that group.

are a fraction of the total population and few even in relation to that segment which identifies with the aboriginal culture. There are not more than 12 living on the reservation today who are known to be maskmakers, and of this number it is only the younger men—those between the ages of 25 and 45—who have done much carving within the last few years (see table 1, p. 381). I was told that in the past more of the older generation made masks but that now the work is hard on their eyes and in general too arduous.

The amount of time devoted to carving is not great, although it varies from one carver to another. No one works at it regularly throughout the year, and some seem to regard it almost as a hobby or recreation to occupy their spare time. While several of the men have made as many as a dozen masks, others have turned out only one or two. Eddie Schenandoah, who is at present employed in Syracuse, is one of the most productive of the carvers whereas Allison Thomas, whose job as caretaker of the community center leaves him free for most of the day, has done comparatively little. Thus, differences in creativity do not seem to be related to the amount of leisure time a man has at his disposal. More probably such differences are dependent on the individual's interest and success in carving, and on whether he finds the work easy or difficult.

At only one period of the year does maskmaking approximate a full-time occupation. This is in the winter, a couple of months before the New Year's Festival. Several informants remarked that although they have no particular desire to carve during the rest of the year, they "begin to get a feeling for it" at about this season and then work steadily in order to be ready for the annual appearance of the False Faces in the Council House.

With few exceptions those who carve the masks are those who use them. They are adherents to the native religious system who have never been Christians, are apostates from the church, or attend the Council House as well as the church. Most seem to be active participants in the False Face rituals and members of the medicine society. They are also central to the old culture through tribal affiliation, language, and association with native politics. Two are chiefs and three are the sons of the present head of the council and themselves eligible for office. The carvers who are marginal to the old culture are those who do little or no mask carving today. Floyd Doctor is a Seneca and, as far as I know, is not a member of the Council House. He picked up the art on the Tonawanda Reservation "because there was nothing else to do during the depression," but has done very little with it since he came to Onondaga. Two other men call themselves carvers although they are avowed Christians and belong to the more acculturated portion of the population. Of these, however, Stanley

Pierce admits that he has not carved for many years, while Andrew Pierce claims to make masks but is repudiated by the Council House people who say that although he has made bows and arrows, he has never carved a false face.

The carvers are not regarded primarily as craftsmen either by the community or by themselves. The reservation as a whole speaks of them as Council House people and members of the False Face Society, while the Christians add the statement that they are lazy. The prevailing sentiment among this group is that only Indians who do nothing else do carving, an assertion which has some basis in fact, as the maskmakers tend to belong to the less prosperous element on the reservation, being frequently out of work and on Government relief.

Among themselves the carvers seem to identify with each other more on the basis of their membership in the medicine society and their common interest in masks than on their technical and artistic ability as craftsmen. Several, when they were asked for the names of other carvers, included Floyd Henhawk, who makes the turtle rattles used by the False Faces and who wears the masks but has never made one. Nor could any one of them give me a complete list of those in the community who do or who have done carving, four or five persons being the most some could recall, while others could think of only one or two. The two men who were most frequently mentioned and who come closest to having the status of craftsmen are Eddie Schenandoah and Kenneth Thomas; the first is known for his ability to turn out a mask in a week, and the other for his careful, finished work.

The general lack of recognition accorded the carvers as such is due, at least in part, to the small number of masks that are produced today and to the close association of these carvings with religion rather than with any of the other crafts. Maskmaking is not necessarily related to the carving of lacrosse sticks, snow snakes, etc., since only three of the men who carve masks also make these objects. The others limit themselves to the false faces and say that they have no intention of trying anything else. Nor is maskmaking associated with the women's crafts. The wives of some of the carvers do beadwork, but women whose husbands are not carvers are just as apt to engage in this work. There is a somewhat closer link with the cornhusk masks which some of the mothers and aunts of the carvers have made in the past. Very few of this type, however, are made today.

The fact that mask carving was formerly a ceremonial procedure suggests that this art has always cut across the other craft specializations and been associated with the medicine societies. There are, however, no historical materials to validate this supposition, just as there is no information as to the amount of carving which was done, its relative importance in Iroquois culture as compared with other activities, the age of the carvers and their position in the society, or the kind of prestige and satisfaction they derived from their occupation. Quain (1937, pp. 267–268, 279) mentions that skill as a craftsman was one of the ways to gain esteem without reference to inherited claims, but taken in context, his statement implies that it was their contribution to the general welfare of the society rather than their artistic achievements per se which brought the craftsmen recognition.

Taking into consideration what is known about the aboriginal patterns and the foci of Iroquois culture, it is probable that occupational differentiations were never well developed but that, to the extent of this development, craftsmen were accorded less prestige than those whose contributions were in the realm of politics, oratory, and warfare. One can guess that masks were never made in any quantity and that although certain men might have been judged to be better carvers than others, it was their proficiency in manipulating the carvings as religious symbols in the curative rituals rather than their ability to create them that set these individuals apart from the rest of the society. It is even conceivable that mask carving was itself a religious technique and was regarded as were clairvoyance and prophecy—a special form of supernatural power or *orenda.* The power to carve would then have been bestowed, along with the power to heal, on any individual who was initiated into the False Face Society.

If this historical reconstruction is correct, it is evident that what may be termed the sociological aspects of maskmaking—the position of the art in the culture and the role of the artists in the community—have not changed materially under the impact of acculturation, but are essentially the same today as they were in the aboriginal society.

## ECONOMICS OF MASK CARVING

Masks were originally clan property, were later acquired by the medicine society, and finally came to be individual possessions which were handed down within families. Exchange in ownership was a ritual rather than an economic transaction and was effected by the new owner adding his bag of tobacco to those already attached to the mask (Keppler, 1941, p. 17). There is not enough historical data to permit an accurate account of the economic significance of the carvings in the aboriginal culture. However, since they were ceremonial objects, masks probably had little if any commercial value within the society, an assumption which explains why the Europeans were able to purchase them at a very low price during the 18th and 19th centuries (Beauchamp, 1905 a, p. 191). Later, when the Indians

Table 1.—*Carvers at Onondaga*

| Name | Approximate age | Economic status | Tribal and political affiliation | Religion | Type and amount of carving done to date |
|---|---|---|---|---|---|
| Allison Thomas | 35–40 | Formerly worked off and on in Syracuse; now caretaker of the community center. | Onondaga; son of head chief of the council; eligible for chieftainship | Once Christian; now Council House. Member of the False Faces and occasionally the leader. | 2 large masks and some small ones. |
| Kenneth Thomas (brother of Allison). | 30–35 | Unskilled laborer in Syracuse; frequently unemployed. | do | Member of Episcopalian church, attends with wife who is Christian. Also attends Council House and participates in False Face rituals. | 4 large masks and many small ones. Snow snakes, bows and arrows; tried a lacrosse stick once. |
| Lee Thomas (brother of Allison). | 30–35 | Occasional work in Syracuse; seems to have no steady job. | do | Council House and False Faces | 1 large mask alone and one with his brother Kenneth. Many small ones. |
| Eddie Schenandoah | 20–25 | Works in Syracuse fairly steadily | Onondaga; mother was formerly clan mother. | do | 11 large masks and some small ones. |
| Pat Homer | 40–45 | Seems unemployed | Onondaga | do | 12 large masks and some small ones. Also a few bows and arrows. |
| James Homer (nephew of Pat). | 20–25 | do | do | Council House and probably False Faces. | 1 large mask. |
| Howard Hill | 60–70 | Retired; small income from lacrosse sticks and paddles. | Onondaga chief | Council House and probably False Faces in past if not now. | Large masks, paddles, snow snakes, lacrosse sticks. |
| George Smoke | 70–80 | Retired | do | Council House and formerly leader of the False Faces. | 1 large mask; a few canes. |
| Levy Green | Over 60 | do | Onondaga; may be a chief | Council House and probably False Faces in past if not now. | Masks. |
| Elijah Hill | Over 60 | do | Onondaga | Council House and probably False Faces. | Do. |
| Floyd Doctor | 40–45 | Employed in Syracuse | Seneca from Tonawanda | Does not seem to have any particular religious affiliation. | Masks, bows and arrows, lacrosse sticks at Tonawanda. Not much carving in past few years. |
| Andrew Pierce | 55–60 | Formerly skilled laborer in Syracuse; now retired. Owns much land around reservation; income from crafts stand. | Onondaga; eligible for chieftainship but refused to give up Christianity. | Christian, regular attendant at the Episcopalian church. | Bows and arrows, ax handles. Claims to carve masks. |
| Stanley Pierce (nephew of Andrew). | 40–45 | Steady work in Syracuse | No tribal affiliation; mother White. | Christian, attends Episcopalian church. | Formerly carved masks at Tonawanda, but makes none now. |

realized that the carvings had a monetary value for the Whites, their attitude began to shift in the direction of greater conformity to western standards. This change may be responsible for the fact that masks are now private rather than community property.

Today at Onondaga the economic aspects of maskmaking are still minimized by those who identify with the traditional Iroquois patterns. In this respect the art differs from the beadwork and basketweaving of the women, which are openly acknowledged to be commercial enterprises, as well as from carving on some other reservations where masks are made specifically for the tourist trade and it is possible to order "a genuine Iroquois false face" by mail. Some Onondagas maintain that masks, being ceremonial properties, should never be sold, although the more prevalent opinion holds that it is use which makes the carvings sacred and that they may be sold if they have never been "doctored" or worn in a ceremony. The chiefs have forbidden sales at the State Fair and from the roadside stands on the reservation and do all they can to prevent the old masks from falling into the hands of the Whites. The position which the carvers themselves have taken toward selling their work is somewhat inconsistent. They assert quite positively that although it is permissible to sell and trade masks among the members of the False Face Society and the other Council House people, it is wrong to deal with outsiders, particularly as Pete Hest has told them to keep all the carvings they make. Actually, however, most of them have on occasion done business with the Whites or with those Indians who have no scruples about selling to the Whites; some have even parted with their "doctored" masks when they were in need of money. How this contradiction between their statements and their actions is rationalized, I do not know. When questioned individually, each carver intimated that although he had never sold a "doctored" mask, he knew of others who had done so, but that these were cases in which there were extenuating circumstances, usually of a financial nature. It may be that they regard the traditional prohibitions as ideal standards of conduct which they feel obliged to follow only when they do not conflict with economic necessity. It is also possible that the leniency which the individual carver displays, toward those who accept the norms but occasionally fail to observe them, may serve to assuage his own feelings of guilt when he finds himself in a similar position.

The attitude of the more acculturated Onondagas is far more explicit. The Christians and others who have no respect for the injunctions of the Council House look upon the false faces as Indian curios which may have a monetary value. Of these people, however, only Andrew Pierce has openly attempted to commercialize the art by setting himself up as a dealer in masks. Along with the bows and arrows, snow snakes, and a group of miscellaneous items which he calls Indian relics, he has a collection of carvings which he lends to the members of the False Face Society, but will also sell to anyone willing to purchase. Most of the masks Pierce has at the present time have been obtained from carvers who have pawned them to him for a few dollars. When they attempt to buy them back, he refuses to sell at the same price, holding them instead for what he can get from White collectors. In the past he had several steady customers in Syracuse, among them a wealthy brewer who bought the carvings now owned by the city's Historical Society. Since Pierce does business publicly from a small craft shop, he has incurred the enmity of the Council House for defying the ruling of the chiefs. By the carvers he is regarded as a middleman who buys cheap and sells high, making a profit on other people's work.[20]

There seems to be no standard price on masks. The cost of a particular carving depends on how valuable it is to the individual who is selling it, how much he is in need of money at the time, and "what he thinks the traffic will bear." Pierce values his masks at anywhere from $5 up to $300, although doubtless the latter amount is the asking price and he would accept less. He puts the highest figures on carvings which appear to be old and those which he considers to be traditional Iroquois types, because White customers will pay more for masks that "look Indian." To achieve this effect he sometimes adds teeth or tusks to those masks which he believes are not "fierce enough," and substitutes clam shells for the tin around the eyes. "When masks have tin on them, people think they are made by Whites instead of Indians." As the Council House people refuse to discuss price, at least on an abstract level, I have no information as to what monetary value they place on false faces. Pierce's criteria—antiquity and conformity to tradition—are probably always important determinants both within the community and outside of it, while other factors, such as technical excellence and the time spent on the carving, may also enter in.

In contrast to the large masks, the small ones have lost their religious associations for most people and are made specifically for sale. They can be bought at the State Fair, at the roadside stands, and at the community center for one or two dollars. Most of the younger carvers make some of this size which they sell whenever they have the opportunity. Lee Thomas formerly did a brisk business with the girls at Syracuse University, who bought them to wear as lapel pins.

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[20] This may be the reason behind the carvers' assertion that Pierce is not a mask carver. However, I was unable to obtain the information that would resolve the discrepancy between his statements and those of others.

It has been pointed out that none of the crafts is an important source of income to the Onondaga. The volume of business which is done in beadwork and basketwork is small, and in the case of masks almost nonexistent; even Andrew Pierce, who comes closest to openly advertising his wares, probably sells no more than three or four masks in the course of a year. The lack of explicit commercialization is not, I think, due primarily to the traditionally sacred character of the carvings, since the religious prohibitions against selling put no restraint upon the Christians and can, when necessary, be circumvented by the Council House people. Rather it is the economic situation which prevents the carvers and the community as a whole from regarding maskmaking as economically profitable. Within the reservation there is very limited demand for false faces. The group which has a use for them is a small proportion of the population, and most of these Indians already own carvings which they have inherited from their families.

Nor is there a large market outside which can be exploited. The Whites in Syracuse and the surrounding areas have come to look upon the Onondaga as a minority group which lacks the qualities of strangeness and savagery that are usually attributed to native peoples. Since these particular Indians do not fit the conventional stereotype, it follows that they are not quite authentic and that the articles which they make are not "genuine Indian" handicrafts. Few tourists, therefore, visit the reservation with the intention of buying souvenirs, while those who do are more apt to purchase the smaller and cheaper items—the baskets, maskettes, bead belts and bracelets—than they are the larger and more expensive masks for which they have no practical use.

The geographical situation of the reservation affects not only the expectations of the Whites but also the attitude of the Indians. Living as they do almost in the suburbs of Syracuse, most Onondagas find that it is easier and more profitable to hold a job in the city than to attempt to create a market for their native products. It seems that it is expediency and particularly financial considerations, not religious sanctions, which have kept the Onondaga from developing the economic potentialities of mask carving.

## RELIGIOUS ASPECTS OF MASKMAKING

In many respects the false faces appear to serve the same function and elicit the same emotional responses of fear and reverence today as they did in the aboriginal culture. The formal features of the curative rituals have been retained, the mythology and religious concepts validating the rituals are still known, and the ancient precepts concerning the treatment of the masks are generally observed by those who use them.

Accounts of the miraculous cures wrought by a particular mask or the unusual powers possessed by another are cited by the Council House people as proof of the positive supernatural attributes of the carvings, while their potentialities for evil are illustrated by stories of what has happened to persons who have been unfortunate enough to offend them. One informant told me of a man whose face became twisted because he had mocked a mask, and another related an incident in which a woman was thrown into convulsions when she laughed at the False Face company.

The masks which are currently worn by the members of the medicine society are hung together in what is called the "*Hodo'wi* Room" of the community center. Most of these were made specifically for the last Midwinter festival and all have been "doctored" in the approved manner by laying them face up on the floor of the Council House and burning tobacco. Each mask has a bag of tobacco attached to it and shows evidence of having been fed with corn mush. The zeal of the Indians in carrying out the prescribed forms extends even to those masks which are no longer in their possession. Allison Thomas told me that he and some of the other carvers intend to visit the Albany museum to "pay our respects to the old fellows up there." Because those masks have been neglected for many years they need to be talked to and propitiated with tobacco.

Yet despite the declarations of faith and the careful observance of the traditional customs, there is some evidence that the old beliefs have faded or changed. Very few of my informants ever referred to the supernatural beings which the masks represent. This omission may have arisen from a reluctance to reveal information of a sacred nature to an outsider rather than from ignorance, although there was little reticence in discussing the religious function of the masks. Those few who did mention the *Hodo'wi* by name tended to do so in the past tense. I was told that they used to live on the edge of the reservation, that they used to be seen occasionally in the woods, that the old people used to dream about them; always with the implication that these events had taken place in the distant past. One young carver made his doubts about the existence of these spirits quite explicit when he observed that although he had been on every part of the reservation, he had never been able to find one. It was this same man who openly expressed skepticism about the efficacy of the False Face rituals. In telling me of a ceremony which had been given for him when he was a child, he wound up with the statement, "I did get well, but of course I had been sick a long time and was due to get well anyway."

Fear of the carvings, of seeing them or touching them, seems to be confined to a few of the younger women. The wife of Allison Thomas is said to be afraid to be alone in the community house; she thinks she hears the masks talking at night and believes they were the cause of a blizzard that occurred one winter. Several of the other women called the masks "nightmares" and "scary," but in these instances I felt they were reacting less as Indians to the symbolic content than as women to the grotesque appearance of the carvings.[21] The older women take the masks for granted as do the men, who show no overt signs of fear or caution when they are near them. They handle the carvings, even those which have been "doctored," with familiarity and, what is more significant, allowed me to do the same.

Along with the probability that faith in the spiritual powers of the false faces is no longer complete and unquestioning, there are obvious indications that some of the practices and professed beliefs have been recently acquired, or at least reinforced, from the outside. Most of the members of the medicine society, and particularly the carvers, have access to the literature on Iroquois masks and rituals through Pete Hest. Their interest in and knowledge of these ethnographic works came out many times in the course of interviews. One man told me that although today at Onondaga the masks are called *hodo'wi*, the real name is *gagohsa* (the Seneca term), and that he knew this was correct because he had seen it somewhere in a book. Another, in trying to explain that the Onondaga do not classify their masks according to Doctor, Doorkeeper, Beggar, and Dancing, as do the Seneca, read the information from a pamphlet by Beauchamp. The illustrations in Wissler's "Lore of the Demon Mask" and Speck's "Iroquois" were cited as a source of inspiration to the carvers when they are in need of "new ideas."

Dependence on the literature is coupled with a tendency to look to Pete Hest for the correct forms of behavior. It is he who has told the men that they should continue to carve masks, that they should keep all they make, that they should not allow the Whites to profane them by photographing them. His role in the medicine society is quite definitely that of expert and teacher. Under his guidance about 10 of the members gather at the community center on winter nights. Here in the room where the masks are hung they eat corn soup, learn the traditional songs from the older men, and study "Indian lore." Although his injunctions to observe the ancient customs are not always obeyed, his knowledge of them commands much respect, for I was repeatedly referred to him as the authority on masks and as the one person who could tell me everything I wanted to know. To what extent he is directly responsible for the preservation of the False Face Society it is difficult to judge. However, he is certainly an important influence in shaping the attitudes and actions of the younger men. As one informant put it, "If Pete Hest is not ashamed to act like an Indian, we should not be."

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[21] Women in our culture to whom I showed pictures of Iroquois masks reacted in much the same way and used almost identical words—"hideous," "frightening," etc.

The carvers' reaction to Whites who show a familiarity with Iroquois ethnography is, to a lesser degree, similar to their reaction to Hest. The willingness of the younger men to explain the purpose of the masks and describe the rituals in which they are used contrasts sharply with the behavior of the older ones—who, for the most part, refused to talk to me at all—and seems to indicate a desire on the part of the former to prove themselves "real Indians." A concrete instance of their efforts to make what they consider to be the proper responses occurred when I inquired if the masks in the community center should be hung facing out, as they were when I first saw them. Allison Thomas, to whom I made this remark, then admitted that he was breaking the rules, and the next time I came to the center, each mask was hanging with its face turned to the wall. Several of my other informants seemed almost apologetic because they could not fulfill the expectations of the White visitor. One explained that he could give me very little information because he had not "studied up lately," while another said that he did not know much about masks but "If I had education, I could tell you more."

The material which has been presented does not permit a definitive statement as to the attitude of the modern Onondagas toward their masks. The problem of ascertaining belief is always difficult, and in this case particularly so, since the Indians themselves are probably not completely conscious of their own convictions. However, the fact that most of the older men will not discuss the masks and their rituals with outsiders suggests that they may have retained their faith in the curative powers of the carvings, whereas the beliefs of the younger men seem to have changed. Although conviction may be acquired with age or experience with illness interpreted as due to the False Faces, I feel that the majority of the men carving today do not regard the masks as sacred but simply know that they should so regard them. Their actions, insofar as I was able to observe them, and their statements to me seem to add up to a self-conscious effort to adhere to those patterns of behavior which they have learned are appropriate for Indians.

## LEARNING AND MOTIVATION

Maskmaking is regarded by the Onondaga as a skill which requires no training or instruction of any sort. The reaction of the carvers when they were asked who had taught them the art was one of astonishment and the answer was invariably "no one." Some seem to be of the opinion that carving is a native characteristic, insisting that "all Indians carve," "it comes natural to us," "it's just in us." Even Floyd Doctor, who admitted that he learned to make masks when the Indian Arts Project was established at Tonawanda, made the statement that carving is instinctive. Others, although they emphatically denied that they had been taught to carve, said that they had picked it up from watching the old men. "It's a matter of interest. If you see other people carving, you will want to start too." Only one of the carvers said that he had acquired his interest from a relative, in this case an uncle. The rest could not remember that any member of their family had ever carved before.

While there is certainly more verbal instruction than the carvers are willing to admit, it is quite possible most do master the essentials of the art without formal training. The technical processes of woodcarving are fairly simple as compared to pottery or metalworking and are such that they can be acquired by observation and imitation as described by one of the men. "A man will stand around and watch another man work. Then he will get his own piece of wood and start as best he can." Nor is there any expenditure of time or money involved in gathering the materials and equipment, since wood can be easily obtained anywhere on the reservation and the only indispensable tool is a knife. I was told that many boys, even Christians, start a maskette and then become discouraged when the wood splits or it turns out to be more difficult than they had supposed. As Christians have no use for the masks, they rarely continue, while Council House people who are not successful in their first attempt are also likely to give it up. Floyd Henhawk is one of those who said he had tried carving but found it too difficult.

In the last few years there has been an opportunity to learn maskmaking not mentioned by any of my informants. The class in Indian lore inaugurated by Pete Hest brings the carvers together at the community center on an average of once a week in winter, and many work on their masks during these sessions. Although Hest is not himself a carver, he encourages the Indians in their efforts and there is undoubtedly some instruction or at least advice offered to the beginners by the more experienced. Indeed, one of the men told me that he was in the habit of giving pointers to others and helping them over some of the more difficult problems.

Two of the carvers, Lee and Kenneth Thomas, have received art training outside of the reservation, as they studied drawing while attending high school in Syracuse. Lee still does some painting, mostly watercolors of Indians wearing masks. Neither of them, however, could see any connection between these classes and their woodcarving. Lee in particular felt that he gained nothing from the experience. "I didn't like it because the teacher made me draw the way she wanted. I like to follow my own ideas."

Since maskmaking is learned informally, and often by the method of trial and error, it is not surprising that the carvers minimize this phase of the art. Yet their refusal to recognize that there are certain situations, such as the class at the community center where teaching does take place, constitutes a negative reaction out of proportion to the facts.

It has been conjectured that maskmaking was originally regarded by the Iroquois as a supernatural technique which was automatically acquired with initiation into the medicine society. Granting the validity of this assumption, the statement by one of my informants that carving is a religous power indicates that some traces of this belief have survived. Certainly if such a retention were widespread it would account for the current opinion that instruction is unnecessary. There is, however, another factor in the attitude of the Onondagas which is brought to light by their assertions that carving is instinctive, natural. Through reading the literature and through contact with men like Hest, they have been impressed with the fact that masks are an old Iroquois custom and an important part of their cultural heritage. Therefore, in their effort to preserve that heritage, it is natural that they should maintain, and perhaps even believe, that carving is an inherent characteristic which no "real Indian" has to be taught.

The problem of motivation, like the problem of religious conviction, is not easily solved. The statements of the carvers are of little value in this connection, since for the most part they seem to be reasons given after the fact. "I got interested in carving and decided to try it"; "I saw other people doing it"; "I had some free time." One man said that everybody would carve if he had good tools and a good place to work; another that he had taken up the art because he had nothing else to do and had continued because people had praised his work, calling it outstanding. No one mentioned the profit motive. Actually, the lack of a market for masks makes it improbable that anyone engages in the occupation for economic reasons.

It is possible that some do carve to gain recognition and prestige among the small group which has an interest in masks. Among the older men faith in the spiritual powers of the carvings may still be the primary incentive. Nor must it be overlooked that maskmaking affords a socially sanctioned outlet for creative impulses. Kenneth Thomas is one of those who seem to derive satisfaction of an esthetic nature from carving, as he lavishes much time and care on each mask and turns out technically perfect work. Eddie Schenandoah is perhaps another. Yet despite the fact that no one motive can be postulated for all the carvers, either individually or as a group, the one common factor among the younger men seems to be their desire to conform to the old way of life. Since carving is regarded as a typical Iroquois activity, it provides an obvious means of relating to the aboriginal culture, allowing the Onondaga to fulfill the conception which they have of themselves as Indians.

## TECHNICAL AND ESTHETIC PROCESSES

The ancient method of mask carving has long been obsolete. I was told that no one on the reservation ever works on a live tree and none of my informants could remember hearing that anyone had done so within the past 100 years. Most of them, however, knew that it was an old Iroquois custom, and one man expressed a desire to "try it sometime." Today there are no religious proscriptions placed upon the carvers, and few traces remain of the rituals which were formerly interwoven with the technical processes. One carver did say that tobacco may be burned when the wood is being cut from the tree, but I could not be sure whether he was describing a current practice or simply stating what he knew to be the ancient, and therefore proper, procedure.

Basswood still has the prestige of tradition and is generally preferred because it is a soft, light wood. The carvers find it easy to work and say that the finished product is light enough to wear with comfort. Other types of wood which are used include poplar, well-seasoned white pine, and butternut. As the latter is heavier than basswood, it is not so apt to split. Cedar is considered too heavy, and willow, though light, is difficult to carve because it has knots. All of the carvers work the wood when it is very dry or almost rotten, since by then it has already cracked and they can allow for this fact in the carving. Sometimes the bark is stripped from a standing tree so that it will die and be thoroughly dried out before it is felled. Although a few of the Onondagas told me that masks should be started in green wood and worked gradually over a long period of time, this method was advocated only by noncarvers and is probably a retention from the days when carving was done on a live tree.

The carvers' basic tools are knives and chisels, but they employ any tool which facilitates their work and allows it to progress more quickly. The initial processes, which consist of cutting the wood into the shape of a semicylinder and roughing out the features, are performed with hatchets and saws. The holes for the eyes and the mouth are made with drills, while small knives and files of various kinds are considered necessary for refining the forms and finishing the details. The crooked knife, traditional tool of the eastern Indians, is used along with chisels for hollowing out the back. Although vices are owned by several of the carvers, they are never used for masks. One man thought this tool might be helpful but the others said that it would crack the mask after it had been hollowed. The carver generally places the piece to be carved on a larger block of wood or braces the carving against his chest or knees. Always working with the grain of the wood, he carves either toward or away from his body—whichever is easier in relation to the way he is holding the mask.

While most masks are made from a single piece of wood, additions such as teeth or tusks may be pegged in. Some men sandpaper before they paint because they like a glossy surface; others prefer the rough texture of the knife marks. Red is the favorite color; occasionally, however, the carvings are given a dark brown finish which makes them look antique. After the mask has been painted, the hair is tacked on. This may be short fur which encircles the face like a ruff or it may be the more traditional long horsehair. The latter, which is obtained from a slaughterhouse in Syracuse, is dried out and then pounded with a mallet to soften it.

There are certain individual differences in the methods of the carvers. Some start to hollow the back before they have progressed very far with the features, others finish up the front before they begin on the back, and still others work the back and front alternately. One man pointed out that he always tries to keep the features at the same stage of development, since if one part gets ahead of the rest it results in a poor carving. Several of the carvers said they found it necessary to try their masks on while they were working them to check the position of the eyeholes and to be sure they fit without rubbing or scraping the face. The speed with which the men carve also varies considerably. Kenneth Thomas works very slowly, taking 3 to 4 months to complete one mask, whereas Eddie Schenandoah is able to finish one in a week or less.

Most of my information on the techniques of carving was acquired by questioning the men about their usual method of procedure rather than by observation of the actual processes, since I was on the reservation during March and April, months which are "out of season" for the maskmakers. None of the carvers were working on masks at this time, nor could any of them be persuaded to start a large one for my benefit. The excuses given were that they had just finished carving for the Midwinter Festival, that they were too busy, or that they had no properly seasoned wood. However, after I had displayed a great deal of interest and curiosity, and had offered to pay him any amount of money he thought fair, Allison Thomas agreed to make a maskette for me.

This carving was done in a room of the community center adjacent to that in which the masks are hung. The greater part of it was accomplished during an evening session of about 4 hours, an hour on the following morning being sufficient to complete the job. He made no sketches before he started nor were there any masks or pictures of masks in the room to which he could refer as models.

The only wood which Thomas had on hand and which he thought suitable for his purpose was a small cylindrical piece of cedar. He began by scraping the bark off the outside with a large knife, then placed the piece on a larger block and split it down the center, using his knife as he would a chisel by pounding on the top of it with a hammer. Choosing one of the halves, he did some more scraping on the rounded side, changed his knife for a smaller one and made two diagonal cuts across the top for the eyebrows, commenting that masks needed all kinds of knives, big blades and little blades. "This one (mask), I don't really know how it's going to look. It just keeps on forming." His wife, who was present at the time, said, "Make a funny one."

Using the point of his knife, he traced some lines on the wood, seemingly trying out various possibilities, and indeed did remark, "This helps me plan the features." He then dug two little holes below the brows, held the piece away from him to scrutinize it, and made a cut near the bottom for the mouth. Taking up the larger knife again, he sliced off the lower edges to form the chin. Another cut below the first gave him the position of the lips and he began to dig between and around them, saying as he did so that if he had been making a large mask, he would have started using chisels at this stage of the work. Before he had gotten very far with the mouth, however, he returned to the eyebrows, cutting in above and below them so that they stood out from the face. "I switch all over when I work. If I were to work on just one feature it might spoil." He also made the comment, which he repeated several times later on, that this mask was completely different from any he had previously carved or had ever seen. "I never made one like this before. It forms as I make it. I don't need any designs; it's right in my head."

In rounding off the forehead, Thomas left a crestlike projection in the center which joined the eyebrows and became the top of the nose. Deep cuts around the nose and eyes brought them into relief and formed the cheekbones. He continued to work on these features for some time, and then went back to the chin, doing some slicing on the sides to make it narrower and taking a large triangular piece off the back which caused it to jut forward. This last operation was performed with a saw on the log of wood he was using as a work bench. For the most part, however, he worked on his lap or braced the piece against his chest.

Still using his knife, he marked a rectangular area on the back and started to splinter out the wood in long strips. On a large mask he would have drilled holes 3 or 4 inches deep along the lines he had drawn and employed a chisel for the hollowing process. After making a depression of about half an inch in the back, he drilled the eyes and mouth from the front, again placing the mask on the log and holding it steady with his knee. He then worked alternately on the back and the front, giving special attention to the eyes, and remarked, "I never made eyes like this before." By this time all the forms were fairly well defined except the mouth, which had been neglected and which he said was the hardest thing to do because it was apt to split. If it is only a small split it can be glued or filled with plastic wood, but if too large it spoils the mask. In fact, when he did get around to the mouth, a small portion of the lower lip broke off. Before repairing the damage, he went to work with a file, cutting two grooves above the eyebrows, widening the eyes, and rounding off the sharp edges of all the features. The chip from the mouth was then glued back into place and the mask was set aside for the night, as Thomas said he could do nothing more until the glue had dried.

When I arrived the next morning, he was already at work again, hollowing the back and refining the forms with knives and files. Even after he began to sandpaper, which is the final process, he kept returning to these tools to clarify details and define the features more sharply. He used sandpaper wound around a small screwdriver to smooth the inside of the mouth and the eyes to which he again referred. "He's got goggles. I never made them like this." He finished the inside of the mask as he would have a large one, filing the edges of the back to even them off and going carefully over all the rough spots with sandpaper. He did not take equal pains with the sides of the carving, however, explaining that "You don't have to work real good on the sides because you use hair." When he came to paint, he used a bright red enamel for the main color, accentuating the eyes with white and the brows with black. The horsehair could not be put on until the mask had dried, but he had prepared two little strands and showed me how they were to be fastened to the top with tacks.

The finished product was about 6 inches high, a variation on the crooked-mouth type of false face with round eyes and all the features somewhat flattened (pl. 104). Thomas was quite proud of it, saying that he was going to make a large one like it in basswood which he far preferred to cedar. I believe it was the eyes that particularly pleased him, as he felt they were unusual. Actually, round eyes are as common as any other shape, although he had made them oblong on his two previous masks. He charged me $2, the standard price for a maskette of this size, and later gave me some Indian tobacco in a matchbox so that I could care for it in the proper fashion.

The frame of mind in which the carvers approach the problem of making a mask seems to be that expressed by Thomas in his comment, "It forms as I make it." Several of the men said that they occasionally drew a sketch before starting to carve or outlined the features on the wood with a pencil, but they made it clear that this was not their usual method of procedure. The others declared that no preparation of this nature was necessary and all of them, even those who admitted that they sometimes worked from a drawing, said they never knew what kind of a mask they were going to make when they started and had no idea how it would turn out until it was finished. "I never have any plan when I start, no ideas at all. Funny, it just comes to you as you go along." "I just go to work and let it turn out as it will." "The first piece I made I didn't even outline it in pencil. Just drilled the eyes and started digging in."

It is difficult to say how literally these statements can be taken. Certainly a great deal of planning and thought goes into the creation of a mask, and the comment, "I didn't even outline it" suggests that outlining is in fact a common practice and not an exception. However, it is not necessary to assume that the analysis of the esthetic problem always takes place on a conscious level. The way in which Thomas worked, without sketches, handling his tools with skill and moving swiftly from one step to the next, seems to indicate that he was drawing upon a vocabulary of forms with which he was so thoroughly familiar that he seldom needed to stop to make a conscious choice. The result was a mask which, like most of those that are carved today, was well within the limits of the Iroquois style. This conservatism combined with the apparent lack of a carefully worked out plan can best be attributed to the fact that the patterns of art are largely unconscious and that the carvers fail to realize how deeply they have been conditioned to the traditional forms which, with some modifications, they invariably repeat.

When questioned specifically as to where they obtained their ideas or designs for masks, each carver mentioned at least one of the three sources from which their knowledge of the traditional forms is derived—the mythology, the literature, or the old masks. Lee Thomas said that he sometimes made his carvings in accordance with the origin legend, depicting the twisted mouth and broken nose of the first False Face. Allison cited the illustrations and descriptions of masks in the publications of Wissler, Beauchamp, Speck, and Fenton which are kept in the *Hodo'wi* room of the community center. The others, while they denied using pictures, acknowledged the influence of the old masks, both those on the reservation and those they have seen in museums. Several said they had visited the collections in Syracuse and Albany for the express purpose of "getting ideas," and one man admitted that he had once made an exact copy of a mask in a museum, although he "didn't think much of it" after it was finished. Most of the men regard the old carvings simply as a source of inspiration rather than as models. "I just like to look at them. Makes me want to carve."

It is worth noting that none of the carvers spoke of dreams or visions of the *Hodo'wi* which Fenton has reported dictate the formal treatment of the masks. While it may be that my informants do carve according to dreams and deliberately withheld this information, Pete Hest, who seems to have their confidence, is familiar with what he calls "the Fenton theory" and told me that it is "ridiculous."

Certain practical considerations may enter in as a limiting, though not a determining, factor in design. One man pointed out that since the vision of the dancers is greatly restricted by masks ("hard to see while dancing except just a small bit in front"), there is much bumping and jostling during the course of the rituals. This means that masks with long sharp noses, while they may be considered artistically effective, are regarded with disfavor from the standpoint of comfort and safety.

All the sources of design cited by the carvers—the mythology, the literature, and the old masks—encourage the retention of the traditional patterns and stabilize the style. To a degree, the Indians recognize and accept their dependence on these sources, since for them tradition is a positive value and they feel that they should produce carvings which are typically Iroquois. At the same time, however, they minimize the extent to which they rely upon models, either masks or pictures of masks, and stress the necessity of imagination and originality. "Sometimes I look at old masks but carving is mostly a matter of imagination"; "I never copy; I get my ideas out of my own head"; "I use my own ideas because I like to be original"; "I just start thinking about masks and get an idea."

There can be little doubt that the carvers really do believe that their ideas come from their own heads. Nor do they see the contradiction between their statements to this effect and their efforts at conformity to Iroquois style, a fact which was strikingly illustrated when Allison Thomas told me he never copied old masks and then proceeded to describe an antique false face he had seen at the Allegany Reservation and which he intends to reproduce as accurately as he can from the detailed sketches he has made of it.

I can only interpret the discrepancy between words and actions as further evidence that the patterns of art operate, in part, below the level of consciousness. There is, however, another contradiction which cannot be explained solely in terms of unconscious processes since it is verbalized by the carvers. On the one hand they assert their originality and independence ("I use my own ideas"), and on the other they admit that they sometimes use models ("I get ideas from looking at old masks"). Here it seems necessary to assume that there is, in their eyes, some sort of an equation between being original and being Iroquois, perhaps even a belief that the first value follows naturally from the second and is dependent upon it. Such an equation, if it does exist, is reinforced when the carvers derive traditional designs from sources which appear to them to be completely novel, as in the case of Floyd Doctor who said that he had once gotten a "new idea" from an advertisement on a billboard. Because the picture was that of a man smoking, and closely resembled the blowing or whistling type of false face, he was able to reinterpret the new forms in terms of the old and produce a conventional Iroquois mask. Another carver claimed to have made a "different kind" of mouth by exploiting the fact that the piece of wood he chose had a branch on it which he could utilize for this feature. Again the result was a blow-lip mask (pl. 97, *b*). This process of reading-in allows the carver to fulfill without conflict the two apparently contradictory conceptions which he has of himself; that of the artist who is original, who innovates, who follows his own ideas, and that of the Indian who adheres with only slight deviations to the traditional patterns.

## STANDARDS OF TASTE

Some generalizations can be made about the particular qualities or characteristics which, in the opinion of the Onondaga, constitute a good or successful mask. They are derived from my appraisal of the masks which are carved today (pls. 94–99), from the comments of the carvers and others about the appearance of the masks, and from the reactions of a small group of Onondagas to a series of photographs which included both Iroquois and "foreign" masks, the latter chiefly those of the Northwest Coast Indians. The information obtained from these three sources suggests some of the criteria which determine the stylistic elements of the carvings and which serve as a basis for critical and appreciative judgments.

To a western observer the most striking characteristic of contemporary Onondaga carvings is their conformity to the traditional Iroquois style. With few exceptions, the masks which I saw, and which I believe to be representative of the work of the modern carver, resemble the conventional types described and classified by Fenton from a study of museum collections.[22] Some deviation from these types is evident, but it results from the modification or exaggeration of the old forms rather than from the invention of new ones. The spoon-lipped masks of Kenneth Thomas on which, in contrast to older specimens of this type, the spoons are smaller and the lower lip is elongated to form the chin (pls. 94, *a*, and 94, *c*), or the unusually enlarged and flared mouth on the blowing mask carved by Elijah Hill (pl. 98, *a*) are examples of such changes. The use of white paint to accentuate the eyes, the brows, the cheekbones, and the teeth may be considered another minor innovation since the ancient masks were painted a solid color. Yet this too is an elaboration, not an alteration, of the features and is quite consistent with the traditional treatment of the carvings which aimed at achieving a dramatic and striking effect.

Only two masks seem to me to be approaching the limits of Iroquois style. One of these, shaped like a skull with large, round eyes and bared teeth, resembles a death's head and has no precedent that I know of (pl. 98, *c*). The other is crudely executed with no detail or refinement of the forms, which suggests that its un-Iroquois appearance is due more to a lack of skill on the part of the artist than to a deliberate attempt to deviate from the conventional patterns (pl. 99, *top*).

Within the limitations imposed by the standard of traditionalism, there is considerable variation. Because each mask is made up of a number of independent elements—the shape of the face, the eyes, the nose, and the mouth, the proportioning of these features, and the treatment of details—different effects can be produced through different combinations of the same basic forms. Thus two masks with identical mouths may be quite dissimilar owing to the variations in the other features (cf. pl. 95, *b*, with pl. 95, *c*), while a difference in the mouth type and the amount of surface embellishments may serve to differentiate carvings which in other respects are essentially similar, (cf. pl. 94, *c*, with pl. 95, *b*, in which the outline of the face, the eyes, and the nose forms are much the same). These differences, taken in conjunction with the statements of the carvers that they like to follow their own ideas, indicate the presence of another standard: that of uniqueness or individuality. In the majority of carvings this second standard is subordinated to the first, since individuality is achieved by the use of the old forms and remains within the limits of the established style.

The fact that in some of the masks the formal elements are developed beyond the requirements of traditionalism and individuality, suggests the possibility of technical excellence as a third standard. The quality to which this standard refers is not a specific characteristic but rather a way of handling the forms. It can be summed up in the word "finished" as opposed to "crude," as it requires a precise delineation of the large forms, a breaking down of these forms into smaller ones, an emphasis on detail, and an elaboration and refinement of the surface. Technical excellence is evident in the carvings of James Homer, Eddie Schenandoah, and Kenneth Thomas, particularly in the latter's spoon-lipped masks which are probably the most difficult type to execute successfully. Whether this standard is considered important by the other carvers but not attained because they lack the necessary skill, or whether there is a contrasting standard which prescribes a simpler, less finished treatment of masks, it is impossible to determine simply from an examination of their work.

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[22] Although I was told by several carvers that the Onondaga do not classify their masks at all, I have used Fenton's criteria and distinguished them according to mouth types.

The Onondaga make relatively few comments or evaluations about the appearance of their masks, at least to an outsider. One of the carvers, comparing the ancient masks with the modern, said that in his opinion, "We do finer work now than they did in the past," while another told me that he didn't think much of the masks carved today because they look too much like Halloween false faces. Still another declared that some masks are better than others, but did not specify which one or explain why. Only two carvers passed judgment on their own work. Kenneth Thomas said that every mask he did was an improvement over the last because he always thought of some way to make it better. Eddie Schenandoah admitted that although he tried to make the next one better, it never turned out quite as he had hoped. Neither of these men, however, was explicit as to the meaning he attached to "better."

Several carvers made general statements which indicate a preference for the traditional forms: masks should look old, they should look "Indian," they should be carved according to the origin legend because "that's the way the old fellows used to make them." Much more frequently verbalized is the value placed upon individuality. In referring to their own work, most of my informants tended to minimize the similarities between the carvings and to emphasize the differences. "We all like to make them our own way"; "We make each one different"; "The theme song of the Onondagas could be 'To Each His Own.' " Lee Thomas amplified his claim to individuality by pointing out that his masks could always be recognized by their wide mouths. The carvers also believe that whereas the Seneca carve only certain types of false faces, the Onondaga make all kinds and have a greater range of types than any of the other Iroquois tribes. Actually there is as much, if not more, variation among the Seneca, since Fenton found formal types on their reservations which I did not observe at Onondaga (e.g., tongue-protruding, hanging-mouth, and divided masks).

By asking each of my informants to choose from a series of eight photographs of Iroquois masks the one which he liked the best and to give reasons for his choice, I was able to cross-check on generalizations derived from the other two sources and to obtain more explicit information as to the criteria by which the carvings are judged. Twenty persons were interviewed; fourteen men, of whom ten were carvers, and six women. In discussing the statements of these individuals, I have focused on the differences between the carvers and "the rest of the community" as represented by the other 10 informants.

The photographs that I used are those of masks owned by the American Museum of Natural History in New York City. Only two of them are dated and identified as to tribe, but they are all traditional Iroquois types. They include three crooked-mouth masks, three tongue-protruding, one straight-lipped and one husk-face (pls. 100–103). Since I interviewed my informants separately, their reactions to the pictures may be considered independent in that, at the time they were looking at them, they were not influenced by the comments or opinions of anyone else.

There was almost complete agreement among the Indians as to which photographs they preferred. One or the other, or both, of two pictures was judged to be the best by 18 out of 20 people. The one chosen by the majority (7 carvers and 8 noncarvers) depicts a crooked-mouth mask with a broken nose and many wrinkles (pl. 100, *a*). This type is most common among all the Iroquois tribes and apparently carries the greatest prestige, for it represents the first False Face as he is described in the origin legend. The picture which ranked second is that of a mask which displays to a marked degree the quality I have labeled technical excellence (pl. 100, *b*). It was judged best or was preferred along with plate 100, *a*, by seven persons, six of whom are carvers.

While the choices made by my informants seem to indicate a uniformity in the taste standards of the group, the explanations which accompanied these choices were remarkably diverse. Nor was there any particular correspondence between the choices and the verbalizations about them, since different reasons were offered for selecting the same picture and, conversely, different pictures were selected for the same reason. Many people gave more than one reason, and only one man was not able to explain his choice.

A number of the Onondagas considered antiquity to be the most important criterion. "The oldest masks are best." "What makes them good is that they're old; I don't like the shiny new ones." Others justified their preferences in terms of the origin legend, stating that masks which represent the first False Face are the "most real," "the most natural." Still others asserted that masks should be "fierce looking," "weird," "scary," and one man amplified his statement in a way which suggests that this criterion is related to the Indians' conception of the function of the carvings. "The idea of a mask is to have fright in it. They should be as frightful as possible because they're supposed to chase away the evil spirits."

A few people said that their preferences were based on originality. "A really original way of making"; "Somebody had a pretty good imagination on that one." Much more frequently verbalized, however, was the recognition that preference is likely to be the result of familiarity. "I like it best because it looks something like a mask I once had." "I've seen some that were similar." "It's most like our type, like the masks we use around here." Sometimes familiarity was combined with a sense of tribal pride at the supposed rarity of the mask outside of Onondaga. "I'll bet they don't have any like this on the other reservations. We have some like it around here though." Pictures were often rejected because they did not "look Iroquois."

In commenting on the photographs which they had selected as best, many of my informants expressed their admiration for the workmanship of the carvings and the technical skill of the carvers. "It's got the best carving." "It has lots of work on it." "They sure used good tools when they worked on that one." Pictures which were not liked were judged to be too plain, too simple, too crude. "It doesn't require much carving; could be made in a day."

The material which I obtained through the use of photographs essentially substantiates the generalizations derived from other sources. Both carvers and noncarvers consider as "best" those combinations of forms (i.e. crooked-mouth masks) with which they are most familiar; which are, in their opinion, the oldest, and therefore the most typically Iroquois. The representative function or meaning of the carvings also enters into their evaluations, for they prefer the mask which tells the story of the first False Face and does not merely symbolize, but literally depicts, his characteristics. Originality, as we define it, is rarely operative and then only within the limits of the traditional style. The taste of the Onondaga is narrower than some of their statements would seem to imply.

Insofar as there is a difference between the standards of the carvers and the rest of the community, it is one of degree, not kind. While it is true that a greater proportion of carvers chose plate 100, *b*, a mask which I consider to be more detailed and finished than those shown in the other plates, my informants may not have seen these qualities nor made their selections because of them. However, whether they chose plate 100, *a*, or plate 100, *b*, the carvers seemed to be more concerned with technical characteristics ("lots of work," "used good tools"), whereas the noncarvers tended to emphasize the referential characteristics, the ideas and emotions associated with the masks. The women in particular described the masks as gruesome, awful, horrible; usually with the implication that this was the effect which ought to be produced. "The more hideous, the better." Yet some noncarvers seemed to make their judgments on the basis of technique, while many carvers mentioned antiquity, fierceness, etc.

The foreign pictures which I used included eight Northwest Coast masks that represented a wide range of types, four Chinese masks, two Hopi, and one Eskimo. Although I did not ask my informants to compare these pictures with those of Iroquois carvings, many did so. "There's a lot of difference." "You notice the difference between east and west." Frequently comparisons were evaluative. "Ours are more interestingly carved"; "There's nothing to these"; "They're so plain." One person, referring to the Northwest Coast masks, remarked, "All these look alike. Ours have more variety." Clearly, judgments about the variability within a given style depend upon the perspective of the observer. To an individual within the culture, differences loom large; to an outsider they are minimal. Another informant, with unusual insight, recognized one of the principal reasons why the familiar forms exert a greater appeal than the unfamiliar. "I like ours better even if they are hideous. I guess it's because I'm used to seeing them."

Some people rejected the foreign masks completely. "I don't like any of them"; "They don't look like masks." Others found them interesting, comical, or odd, and a few were frankly bewildered. "I suppose they mean something to the people who use them, but they're way beyond us." On the whole the carvers were more receptive than the other Onondagas, inquiring about the materials and the tools, and commenting favorably on the technique. "Nice carving"; "They do pretty good." One man was quite taken with the Eskimo mask, saying that although he considered it unfinished, he would try to keep it in his mind and make one like it.

There was little agreement as to which were the best of the foreign carvings. Seven different pictures were selected and no one of them was preferred by more than four people, in contrast to the agreement about the Iroquois pictures. The Onondaga react in a similar manner to their own carvings because the culture has prescribed the standards for an Iroquois mask. They have not, however, learned any positive responses to foreign arts so that, in a sense, each person is left free to choose as he pleases. Although, as might be expected, there was a tendency to look for similarities to the Iroquois style, the carvings that were considered to fulfill these criteria differed widely. This does not imply that the choices made by my informants were haphazard, but simply that they were idiosyncratic; the factors which determined them must be sought in the area of personality rather than culture.

One final point may be raised. Do the Onondaga react to masks, either their own or those of other Indian tribes, in a way which we would recognize as esthetic; that is, do they react to the form as well as the content or meaning of the carvings? I believe that there is a concern with form for its own sake which some people do not verbalize, or perhaps even conceptualize, and which others express in terms of the standard of technical excellence ("It's got good carving"). It would seem that the Onondaga do not possess in their English vocabularies such words as "composition," "proportion," or "balance" with which to discuss the formal characteristics of the masks.[23] Yet there is no reason to suppose that they do not respond to these characteristics and that when they say they prefer a particular carving "because it is like the one in the legend," they may not also be expressing their appreciation of form in the only terms they have at their disposal. In this connection it is significant that there were among the series of Iroquois pictures three crooked-mouth masks which presumably have the same associations and symbolize the same supernatural being. One, however, was singled out as best (pl. 100, *a*), while the others were passed over with little or no comment (pl. 101). The difficulty, and perhaps impossibility, of isolating the esthetic response results from the fact that it is rarely explicity stated and is always closely associated with other factors such as tribal pride, the value placed upon antiquity, and the representative function of the carvings.

An esthetic response does not depend upon the existence of an abstract concept of art. The carvers are not regarded, either by themselves or by the rest of the community, as artists but rather as members of the False Face Society. Consistent with the way in which the carvers are perceived is the disposition to view masks always within their ritualistic context. In appraising the photographs, many of my informants remarked, usually with disapproval, that the Iroquois masks had no bags of tobacco attached to them. They also questioned me about the symbolism of the foreign carvings and inquired about the ceremonies in which they are used, apparently taking it for granted that any mask has meaning and serves a specific purpose. Evidently the Onondaga have not assimilated the western conception of art as a thing in itself, a class of objects which have some quality in common apart from their meaning and their function in the culture.

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[23] While it is probable that the native language also lacks an "esthetic vocabulary," there is nothing in the literature concerning this point.

## CONCLUDING REMARKS

An examination of mask carving as it exists today on the Onondaga Reservation has led to the conclusion that the retention of this ancient art is a nativistic reaction to the pressures of acculturation. Nativism need not imply a large-scale, organized movement involving the whole society; rather it may be defined as a self-conscious attempt on the part of some individuals to identify with the aboriginal way of life. Linton (1943, pp. 230–231) has pointed out that nativism is the perpetuation or revival not of whole cultures but of certain current or remembered elements of them which are selected for emphasis and given symbolic value. "The more distinctive such elements are with respect to other cultures with which the society is in contact, the greater their potential value as symbols of the society's unique character." Mask carving satisfies the requirement of distinctiveness, for False Faces have been a prominent feature of Iroquois society for at least 400 years, and quite possibly longer.

Since masks are still looked upon as ceremonial properties and continue to be an integral part of the rituals of the False Face Society, it may be argued that the perpetuation of the medicine society adequately accounts for the retention of carving. Aside from the fact that this explanation solves one problem only to raise another, it is equally plausible to assume that masks have been the crucial factor in the survival of the Society because they have served as striking and concrete reminders of its mythological concepts and its rituals. Moreover, it is precisely in this religious aspect of maskmaking that change seems to have occurred. Although the data do not permit a final judgment, it was my impression that while the religious forms have been preserved, the religious beliefs of many of the individuals who carry out these forms have faded and, in some cases, disappeared completely.

There are, on the other hand, fairly substantial data to support the hypothesis that a conscious desire to perpetuate the aboriginal patterns is the primary reason why masks are made and used today. Briefly restated, the evidence is as follows:

(1) The dependence upon the ethnographic literature as a source of information about masks and their rituals and as a source of design.

(2) The deference accorded Pete Hest who, although a White man, has been accepted into the False Face Society and is respected as an authority on the old customs.

(3) The class in Indian lore which encourages carving, and which is under the guidance of Hest and was apparently initiated by him.

(4) The fact that many of my informants were willing to reveal information of a supposedly sacred nature to a stranger, a willingness which I have interpreted to be an attempt to prove themselves authentic Indians and to fulfill the expectations of the White visitor.

It seems evident that whether or not the masks have lost their old meaning, they have acquired a new one and now function as symbols of the old Iroquois culture and its values. Under these conditions it is not surprising that the style of the false faces has remained stable. Although changes in the direction of diversity and greater elaboration have undoubtedly occurred in the past, today the emphasis placed upon antiquity and tradition inhibits the virtuosity of the artist; his tendency to play with technique and devise new forms. Sometimes deliberately, sometimes unconsciously, the carvers repeat the old forms with the result that modern masks are essentially similar to those described by missionaries and travelers over 200 years ago.

It cannot be asserted that nativism constitutes the only incentive for the retention of masks and the rituals associated with them. Religious conviction, particularly on the part of the older men, cannot be entirely ruled out, and it is very probable that for some of the Onondagas carving offers a socially accepted means of satisfying creative impulses. Nor should the psychological effects of masking be overlooked: the drama that is provided for the spectator, and the emotional release felt by the wearer who is able to relinquish his identity and express himself more freely.

The explanations advanced for the retention of mask carving at Onondaga are not necessarily applicable to other Iroquois since the differences between reservations limit generalizations about any aspect of contemporary culture. Each reservation is unique in the degree and type of acculturation it has undergone, and this, in turn, is dependent upon the interrelation of such factors as the geographical position, the size of the population, and the particular facets of western culture to which the group has been exposed. St. Regis Reservation, for example, has a larger population than Onondaga and is located on the Canadian border between New York State and the Province of Quebec, far removed from any large city. Yet these conditions, which one might suppose would encourage the survival of the aboriginal culture, are apparently offset by the influence of the Catholic church. Eighty percent of the Indians are Catholic and many of the native religious patterns, including the use and making of false faces, have died out.[24]

Precisely because of the differences, Iroquois reservations afford an excellent opportunity for comparative research, as the same traditional art can be investigated in a variety of sociocultural settings. A comparison of Onondaga with Cattaraugus Reservation, which approximates St. Regis in its population size and relatively isolated location, but differs in being less acculturated, might reveal more clearly the conditions which promote or hinder the commercialization of masks. Is it, as has been suggested, proximity to a large city which provides a more secure and profitable means of subsistence than the handicrafts, or are there other, more important, determinants? What is the effect of commercialization upon style? Fenton has reported the development of new types of masks at Cattaraugus and Tonawanda which may be a response to the demands of the tourist market. At Onondaga, however, any outside pressure upon the style seems to be of a sort that restricts innovation, because it is assumed that White buyers want false faces that "look Indian." For problems of this kind, comparative studies are essential. At the same time, the underlying unity of behavior and values that constitutes Iroquois culture regardless of reservation differences makes it reasonable to suspect that a conscious wish to preserve Indian identity plays a part in maskmaking wherever it survives among these people.

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[24] Lincoln White, a resident of St. Regis, kindly supplied me with the information pertaining to this reservation.

There remains the broader question of the extent to which retentions in language, government, and religion, other than the False Face Society, are nativistic in character. Again, no definitive answer is possible as fieldwork at Onondaga was too brief to permit an analysis of the total community. Recent developments in Iroquois culture, however, suggest that further research would have revealed the answer to be an affirmative one. In his series of articles, Edmund Wilson (1960) describes what he calls a nationalistic movement taking place on all Iroquois reservations in response to increasing pressure from White society over the last 2 years. On the economic and political level the movement involves resistance to encroachments on reservation lands and bitter battles in the courts over what the Indians regard as abrogation of their legal rights as a sovereign people. Accompanying this resistence is a reawakening of pride in the Iroquois past which is leading to a revival of the spirit of the League and a new interest in the Longhouse religion. At Allegany there is even talk among the more extreme nationalists of bringing back the White Dog ceremony, and among the young men of St. Regis, the fashion of wearing "scalplocks" has been revived as a sign of Iroquois patriotism.

No such large-scale or dramatic revitalization movement was evident at Onondaga in 1950, but there were indications of a need for self-identification and an effort to find it in traditional symbols. The maskmakers exemplified these characteristics, and it has been pointed out that people who orient toward the old cultural forms in one area of life tend to do so in others. Carvers are non-Christians who belong to the Council House and have some connection with native politics. They are also, when contrasted with the more acculturated portion of the population, of a lower and less secure economic status. When put in this broader perspective, mask carving appears to be but one of the ways in which the Onondaga seek to escape from their position as an underprivileged minority by an attempt to return to an idealized past. To an observer from outside the culture, carving is a particularly appropriate way since it is an ancient Iroquois custom. The attitude of the Indians themselves toward the art is best summed up in their own words: "All Indians carve."

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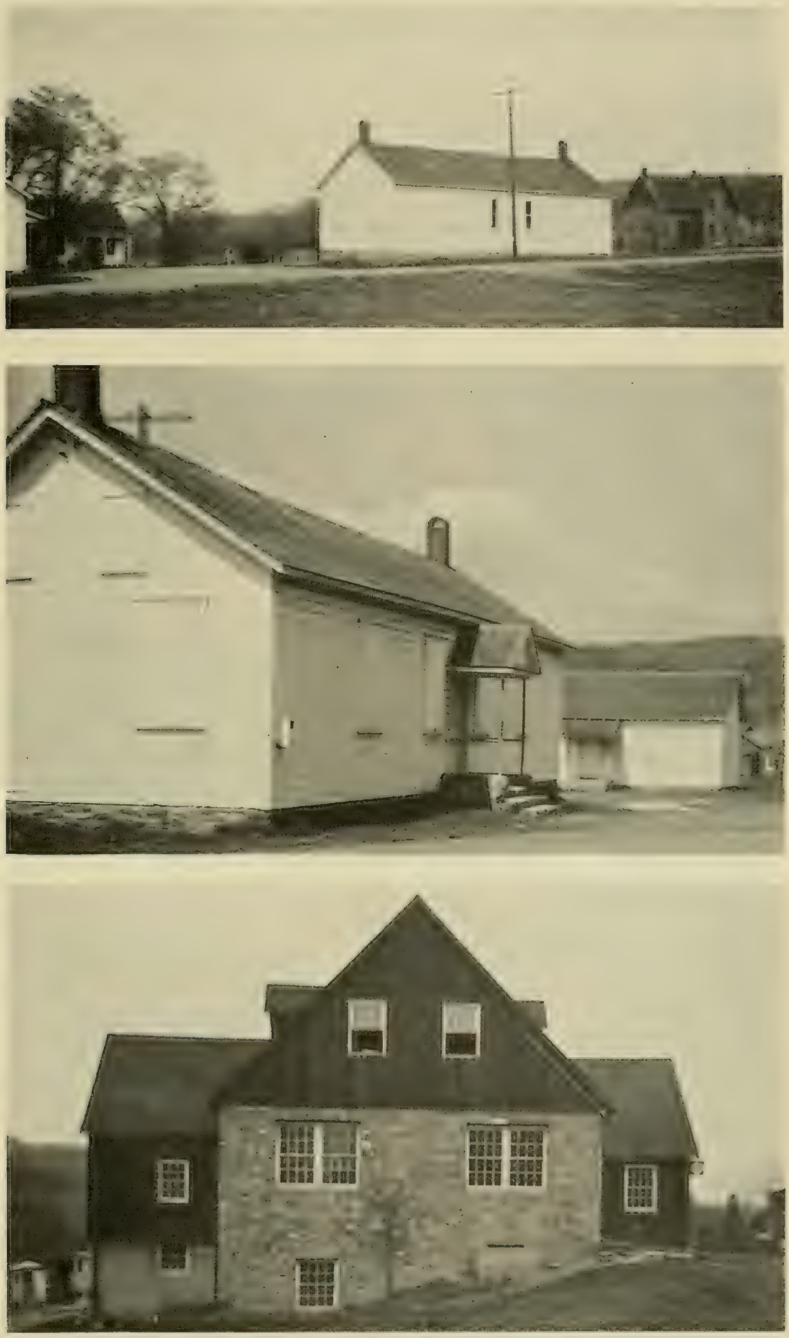
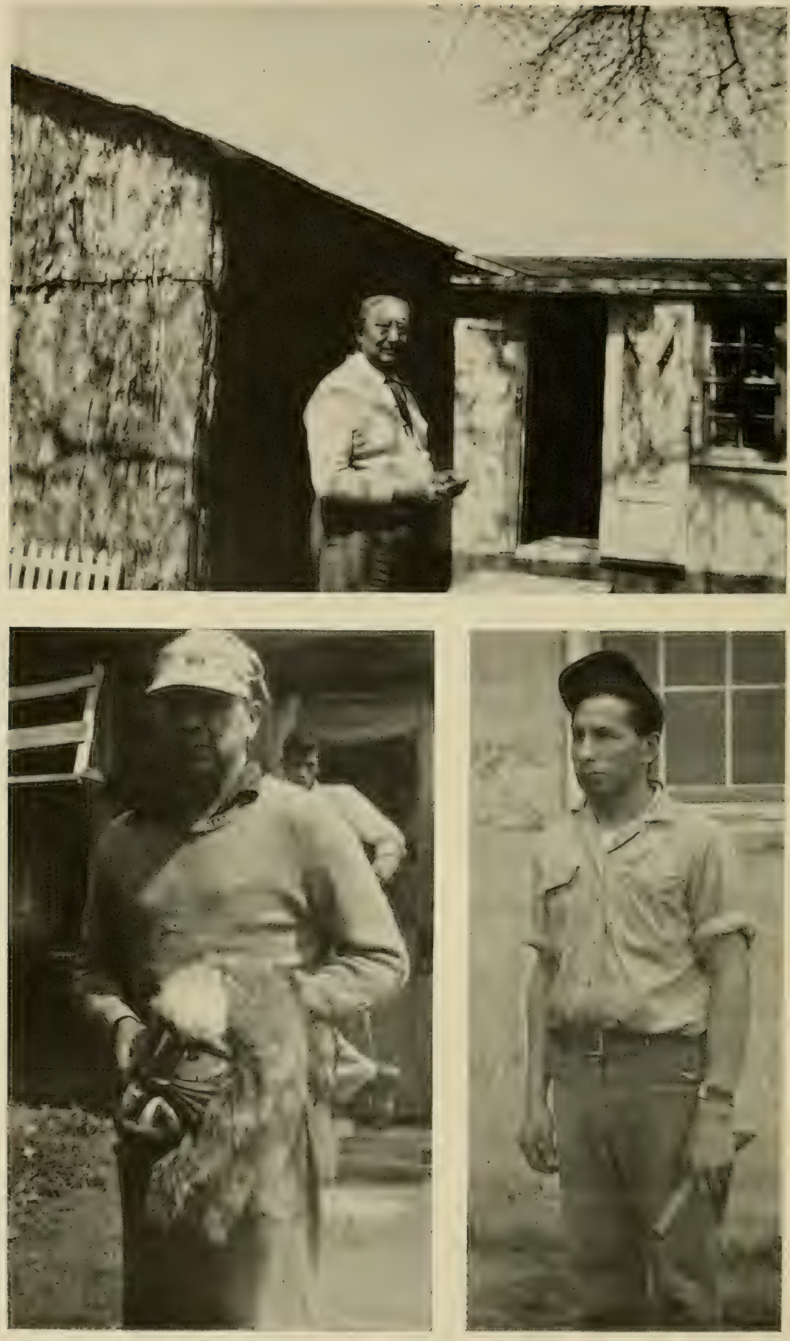
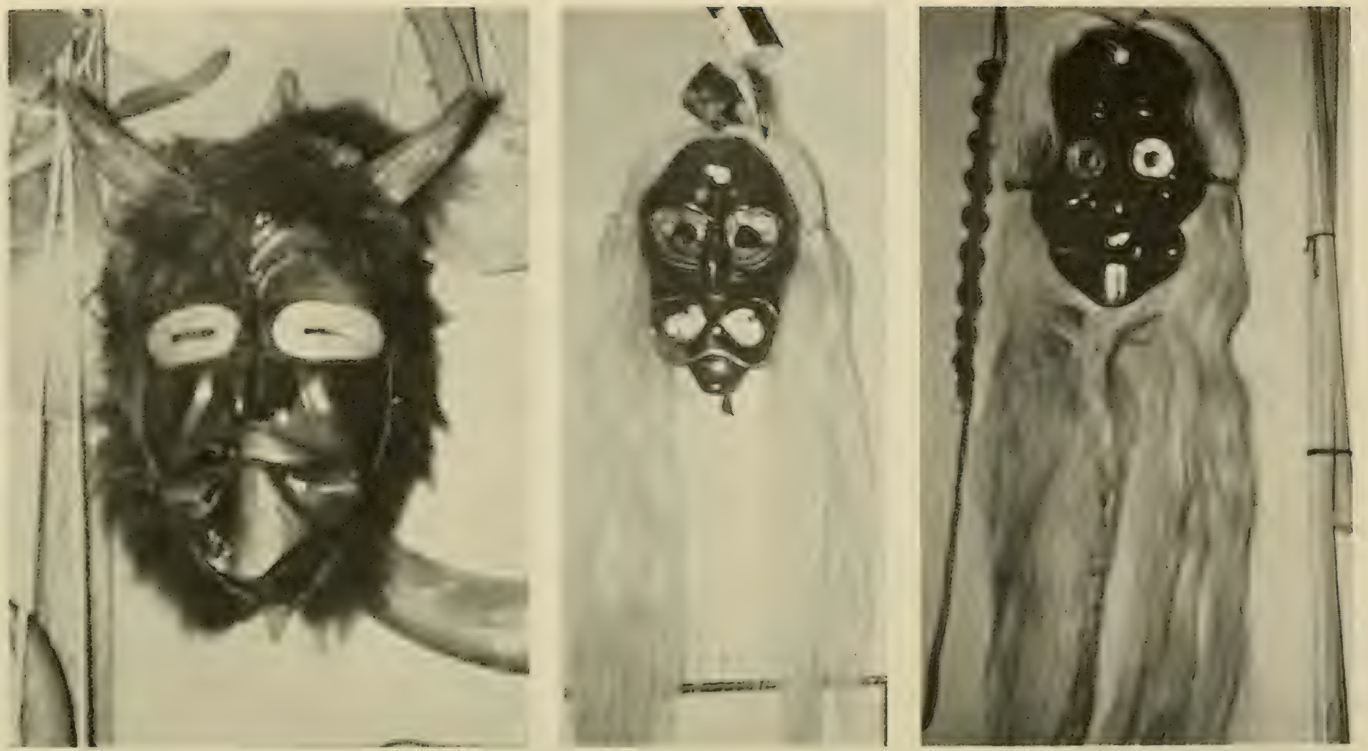


*Top* and *center,* Onondaga Reservation Council House. *Bottom,* Community center.



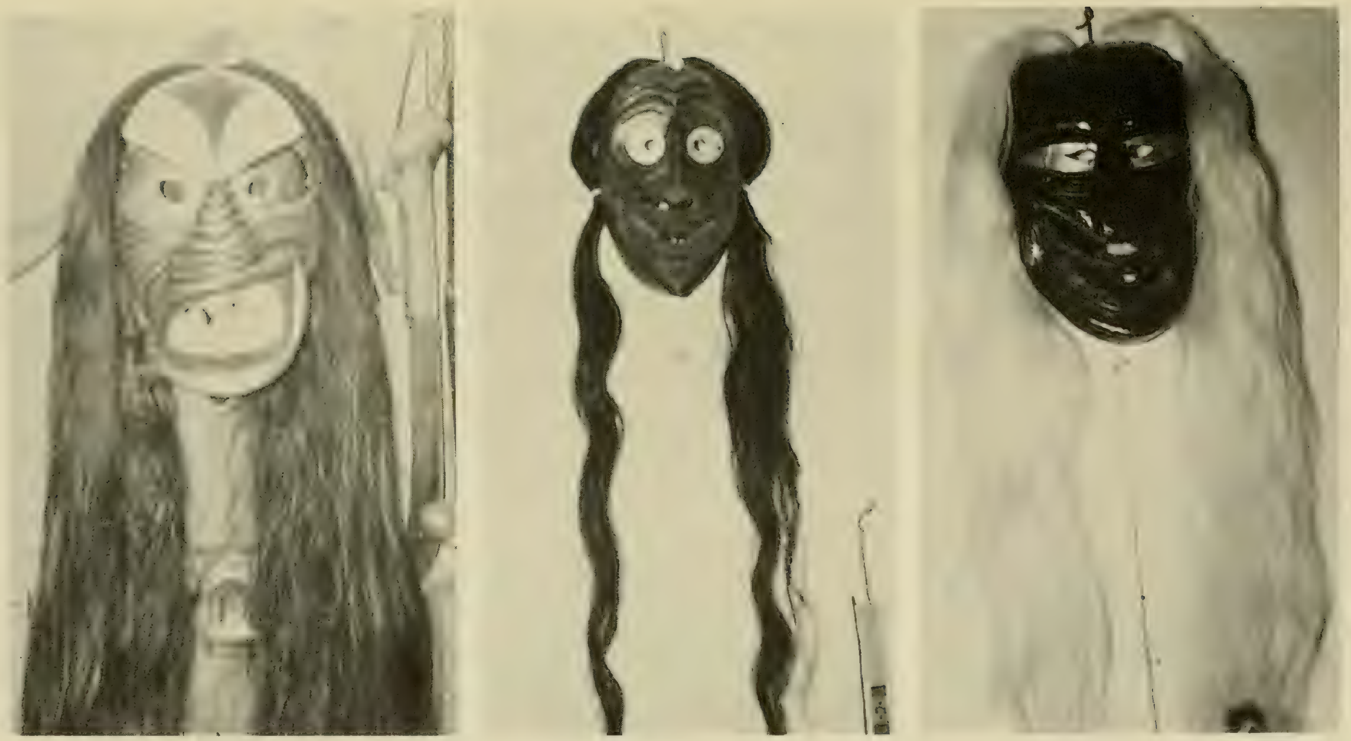
Onondaga Reservation maskmakers.

Onondaga Reservation residences.



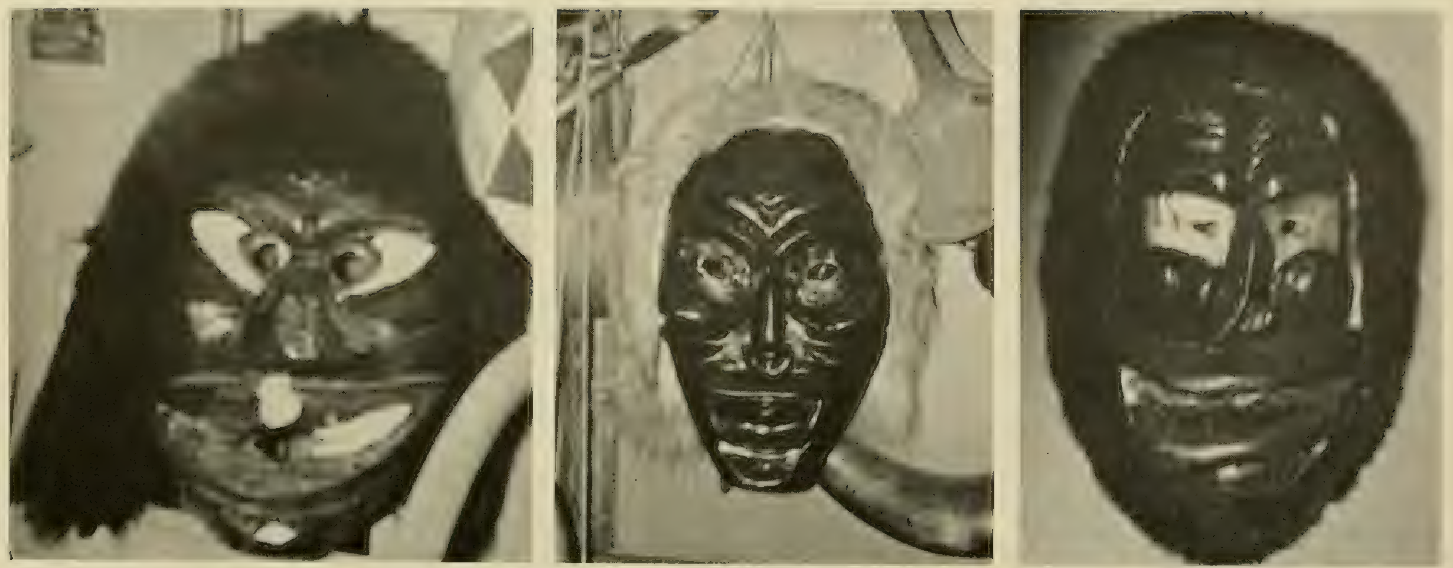
SPOON-LIPPED MASKS

*a*, By Kenneth Thomas; horns added by Andrew Pierce. *b*, By Eddie Schenandoah. *c*, By Kenneth Thomas.



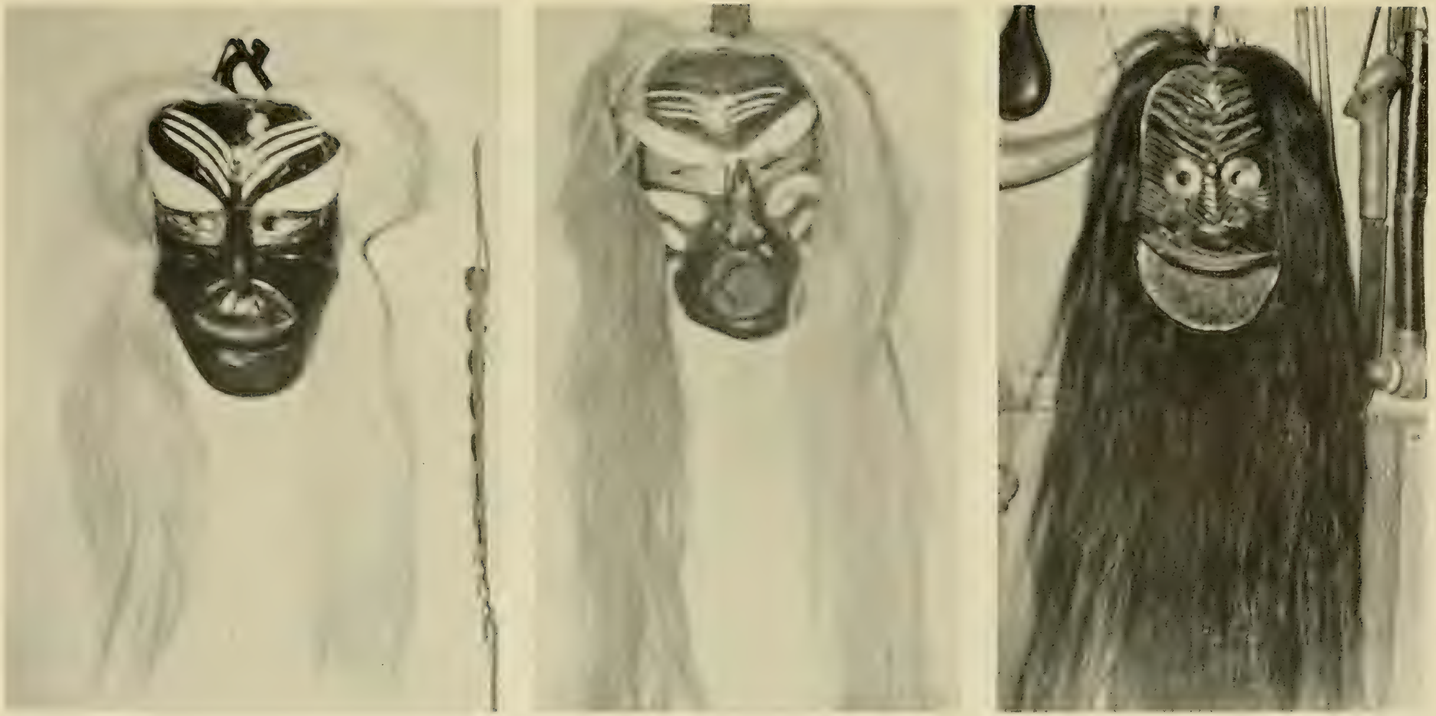
CROOKED-MOUTH MASK AND SMILING MASKS

*a*, Crooked-mouth mask by Eddie Schenandoah. *b*, Smiling mask by Eddie Schenandoah. *c*, Smiling mask by Pat Homer.



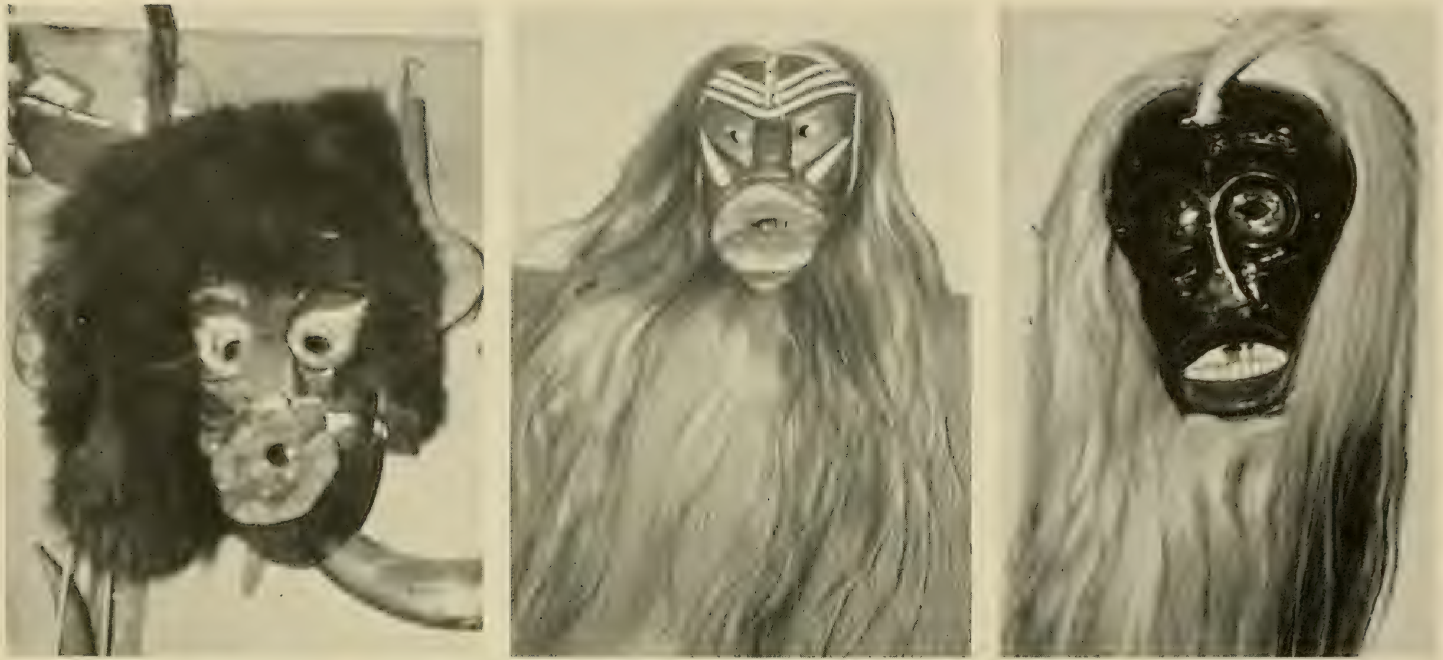
STRAIGHT-LIPPED MASK AND CROOKED-MOUTH MASKS

*a*, Crooked-mouth mask by Pat Homer. *b*, Straight-lipped mask by James Homer. *c*, Crooked-mouth mask by Lee Thomas.



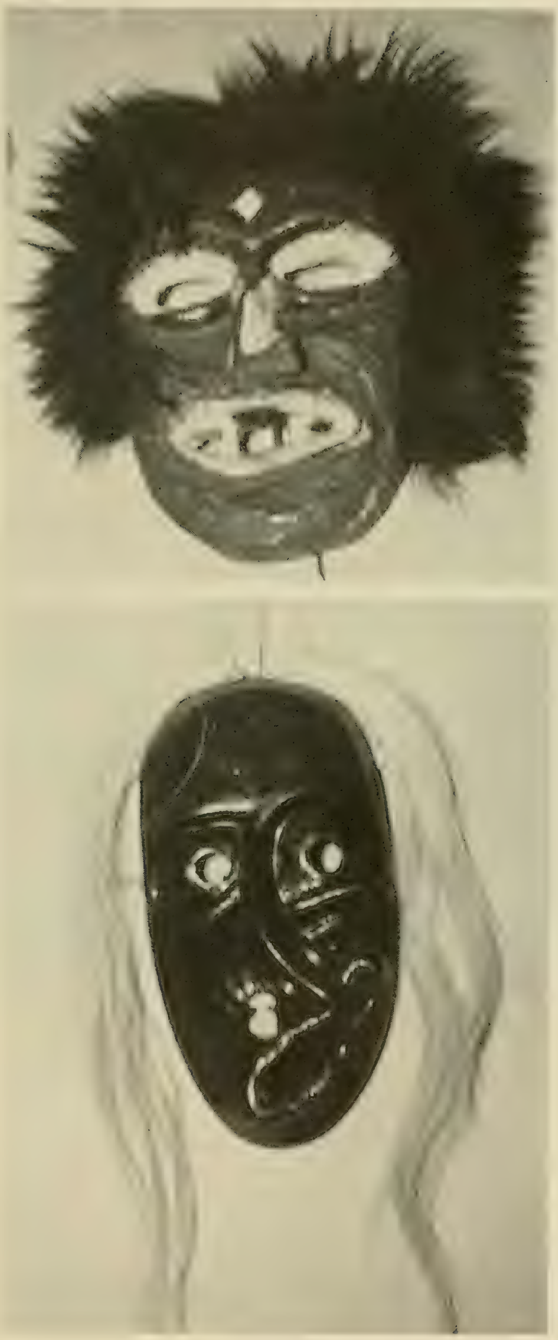
BLOWING MASKS AND SMILING MASK

*a*, Mask by Allison Thomas. *b*, Blowing mask by Allison Thomas. *c*, Smiling mask started by Lee Thomas, finished by Kenneth Thomas.

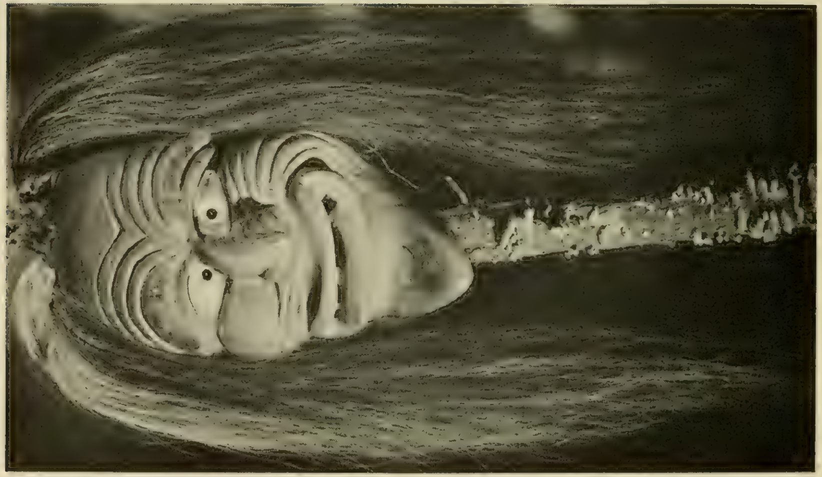


BLOWING MASK AND STRAIGHT-LIPPED MASKS

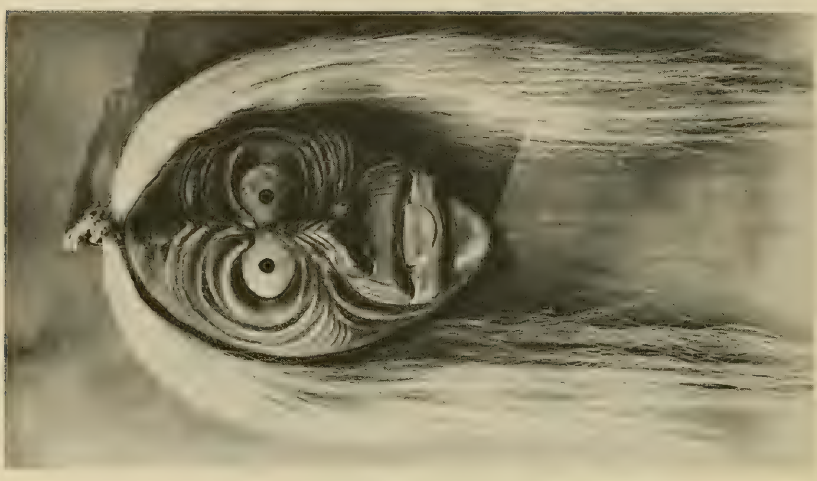
*a*, Blowing mask by Elijah Hill. *b*, Straight-lipped mask; carver unknown. *c*, Mask by George Smoke.



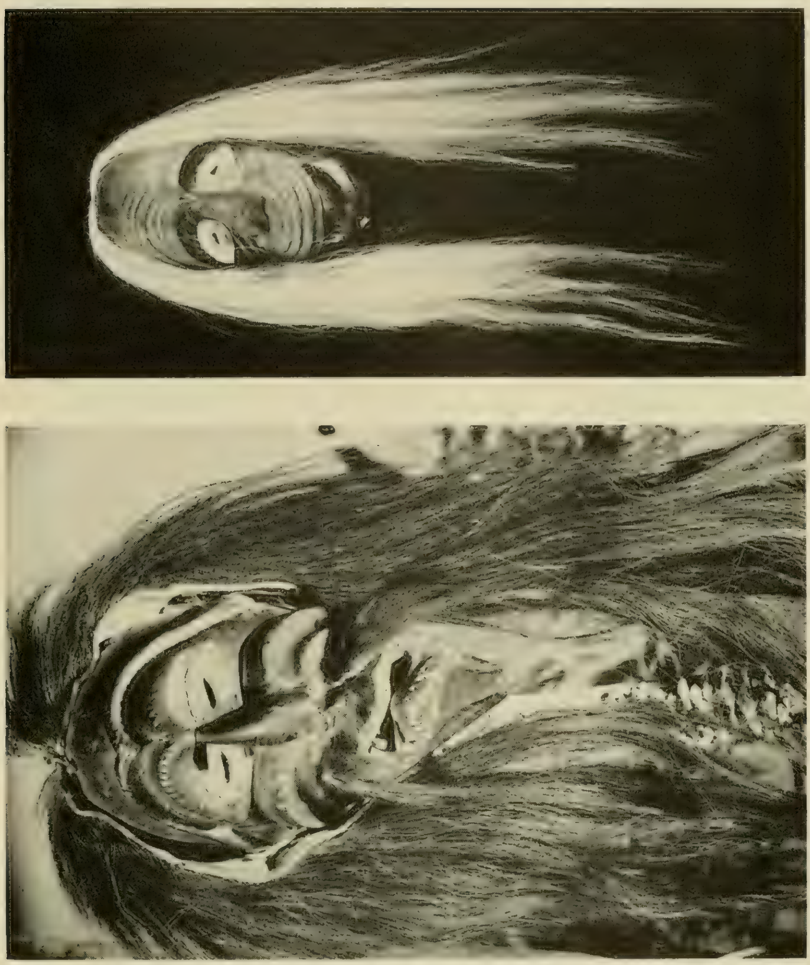
Straight-lipped mask and crooked-mouth mask by unknown carvers.



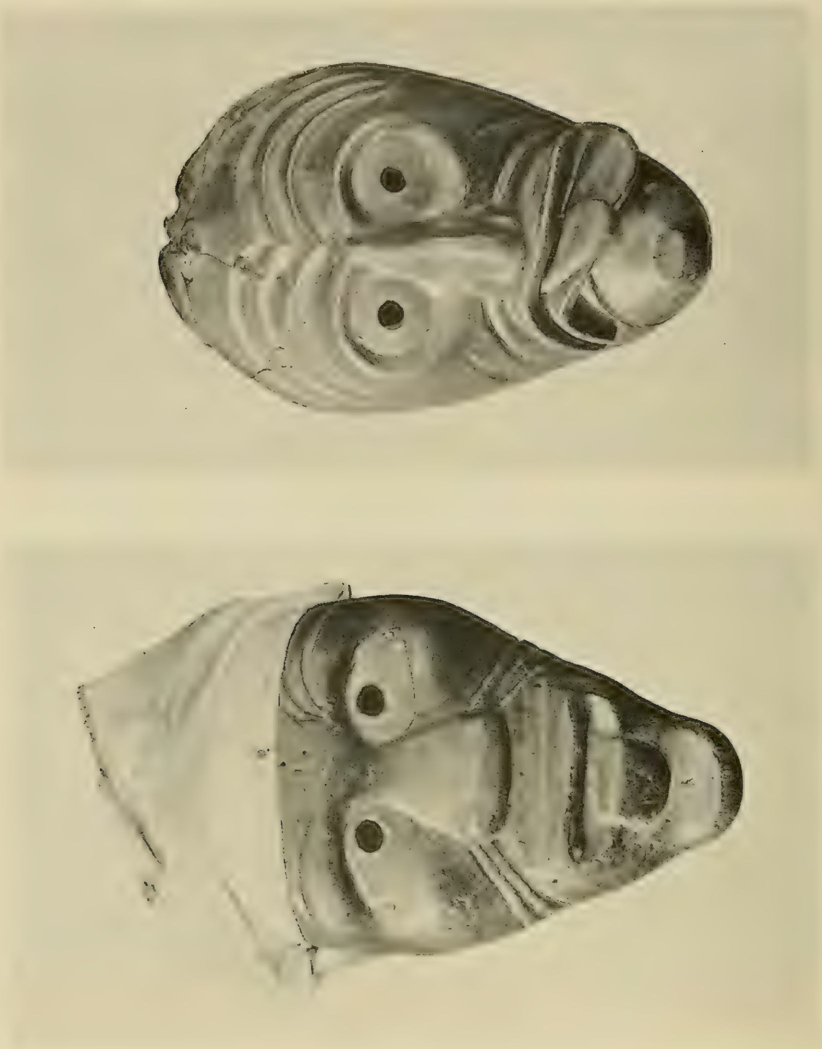
*a*, Crooked-mouth mask.



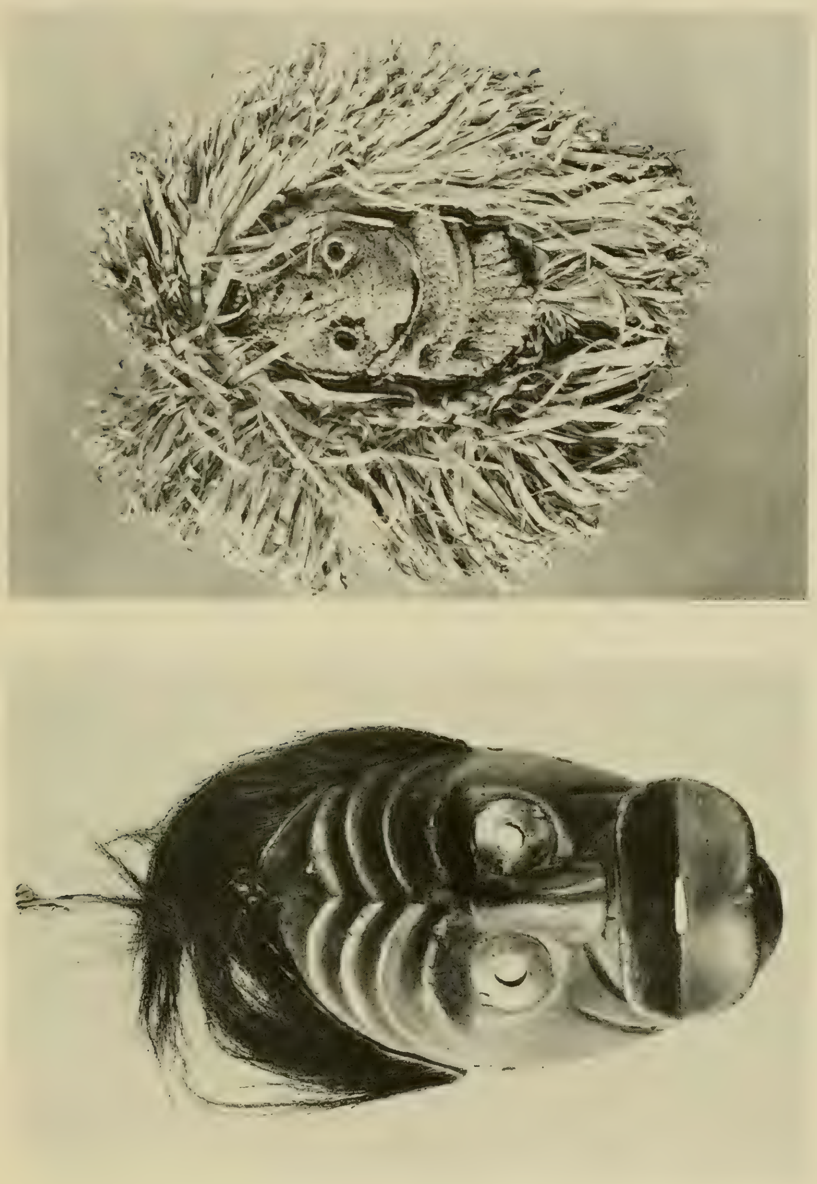
*b*, Tongue-protruding mask.



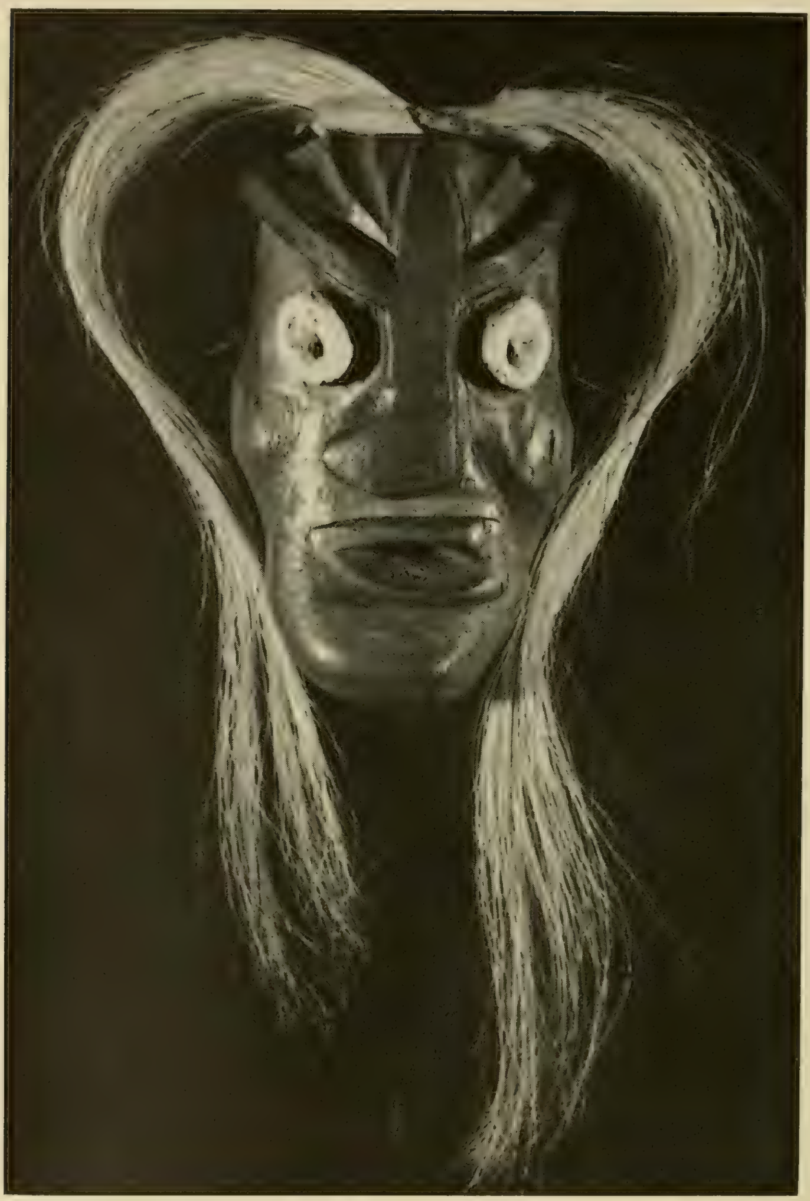
Crooked-mouth masks.



Onondaga 1888 DeCost Smith tongue-protruding masks.



Straight-lipped wooden mask and Husk Face Society mask.



Maskette carved by Allison Thomas.

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